



# INTELLIGENT 12

## Installation Manual

[www.viesa.ca](http://www.viesa.ca) / 1-888 438-8444

## **IMPORTANT**

Installation requires an experienced mechanic with specific knowledge in the installation of the VIESA Ecological Cooler. Installation, disassembly, repairs and maintenance must be performed by an Authorized Installer. Authorized Installer must use proper protective equipment when installing the system.

Improper installation or use of unauthorized parts can cause malfunctions, loss of battery life or other consequences which may result in serious injury.

Manufacturer or Distributor will not be responsible for injuries or damages resulting from misuse of equipment, use contrary to operating instructions or installation by any person other than an Authorized Installer.

Information contained in this manual is subject to change. Manufacturer reserves the right, without notice, to make changes in equipment design or components as progress in engineering, manufacturing or technology may warrant.

World-wide Patents

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## 1- ECOLOGICAL COOLER

### Function

VIESA Intelligent 12 is a roof mounted cab cooler that delivers cool air to the truck's cabin using evaporative cooling and without running the vehicle's engine.

### Operation

Cooling is generated by vaporized cool water delivered by a self-contained electrical motor. During operation it only consumes water and it makes no use of internal combustion engines, nor does it use chemical coolants or emit gases into the atmosphere. The unit is equipped with a water pump located in an auxiliary tank which takes water to the evaporator. A biturbo blower pushes the exterior air to the interior of the vehicle forcing the air through the evaporator and therefore cooling the warm air. The exceeding water backs to the water tank.

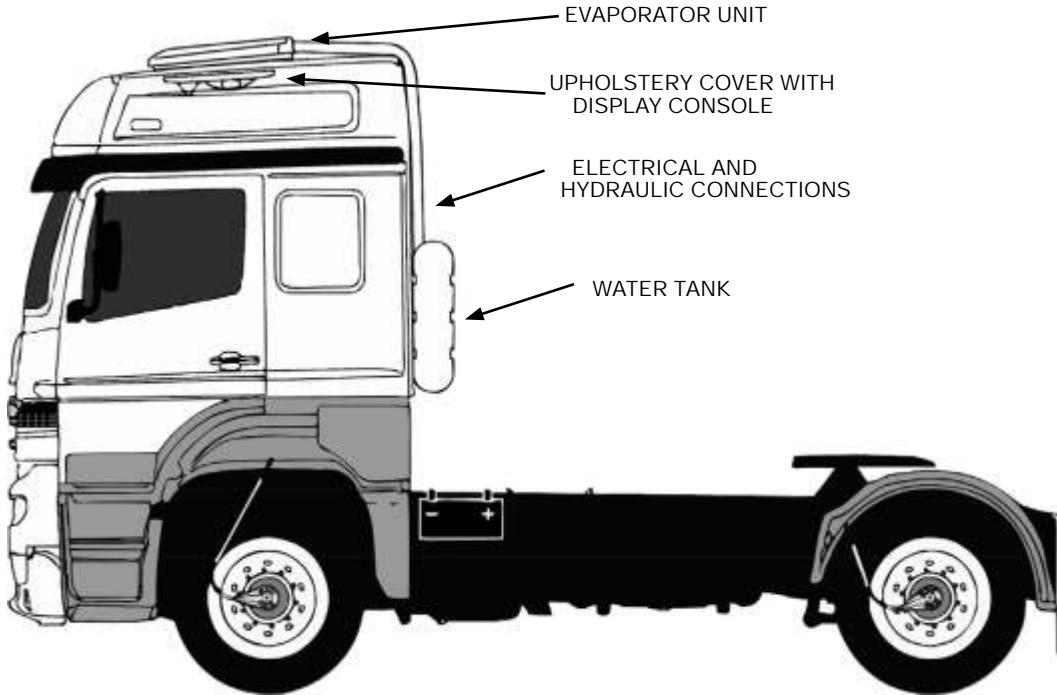
### Application

Applied to any unit with an operating voltage of 12 V.

- ⚠** Viesa Intelligent 12 cannot be installed to cabins with roof-ceiling thickness of less than 6 cm.



## 1.1- LOCATION OF PARTS AND COMPONENTS



## 1.2- TECHNICAL CHARACTERISTICS

- Evaporator automatic drying system.
- Evaporator replacement indicator.
- Voltage sensing in battery terminals.
- Full remote control.
- Digital LCD board with control on all functions and indication through symbols.
- Automatic turbo speed regulation according to the external temperature.
- Clock and Alarm clock.
- Auto switch on.
- Auto switch off.
- Equipment designed and manufactured according to EMC norms of electromagnetic compatibility.
- Distribution air ducts with airtight closure.
- Turbo fan with sealed motor mounted on bearings.
- 8-speed turbo fan.
- Anti-spill water system
- 32-liter water tank with pump cover.
- 2 to 5 litre average consumption of water per hour, depending on ambient humidity
- Water level sensor.

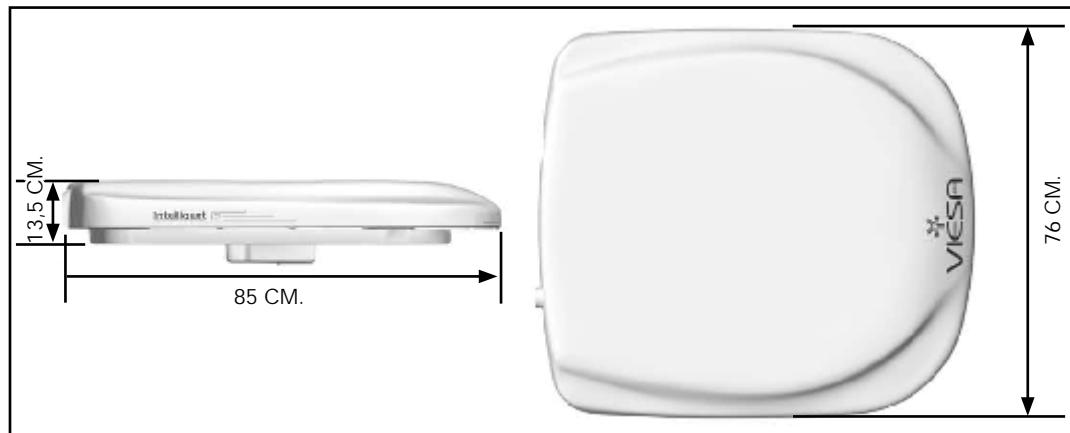
Water pump designed exclusively for Eco Air Cooler.  
 Disconnection of the pump due to low water level.  
 Short circuit protection system in pump and its connections.  
 Automatic system disconnection due to low battery voltage.  
 Protection system for high voltage.  
 Protection fuse in main feed wire.  
 Protection for polarity reversal.  
 8 Amps. per hour average consumption with fan at maximum speed.  
 4 Amps average consumption per cycle of the water pump  
 7,5 Amps. per hour average consumption of the fan.

## 2- MAIN COMPONENTS

The equipment consists of an evaporating unit, electrical and hydraulic connections, an upholstery-cover and a water tank with pump.

**Important:** *Vehicle with equipment installed must not exceed maximum allowed height*

### 2.1- EVAPORATOR UNIT



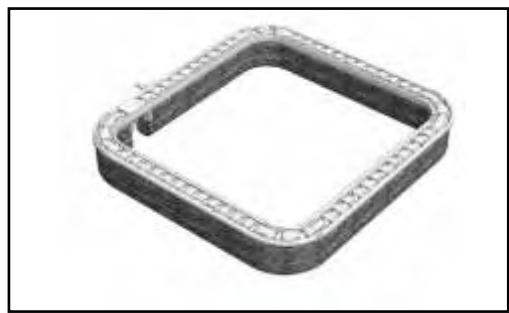


**COVER OF THE EVAPORATOR UNIT**



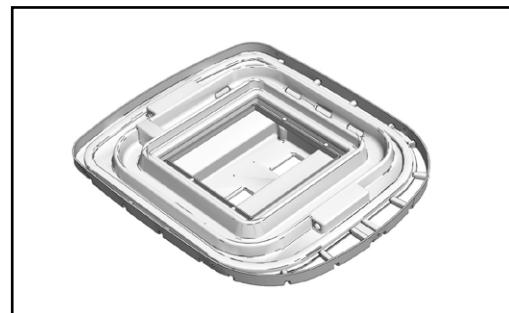
## EVAPORATOR

Composed of two even distributed layers of special wood shavings.



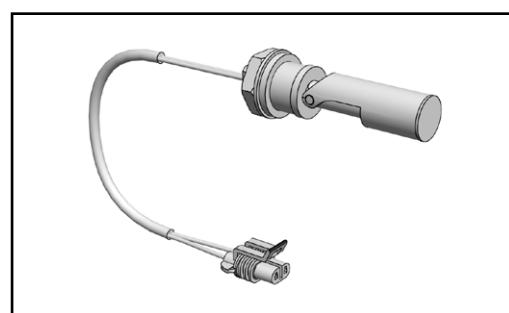
## BASE AND TRAY TANK

This element works as a water deposit and it collects the excess water that the evaporator receives. It allows the return of excess water to the water tank.



## LEVEL SENSOR

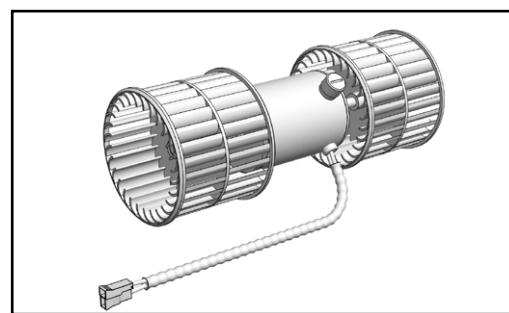
Its function is to monitor permanently the presence of water in the tank, activating the water pump when the level is low.



## BITURBO BLOWER

It has two turbines which absorbs the air that comes from outside forcing it to the interior.

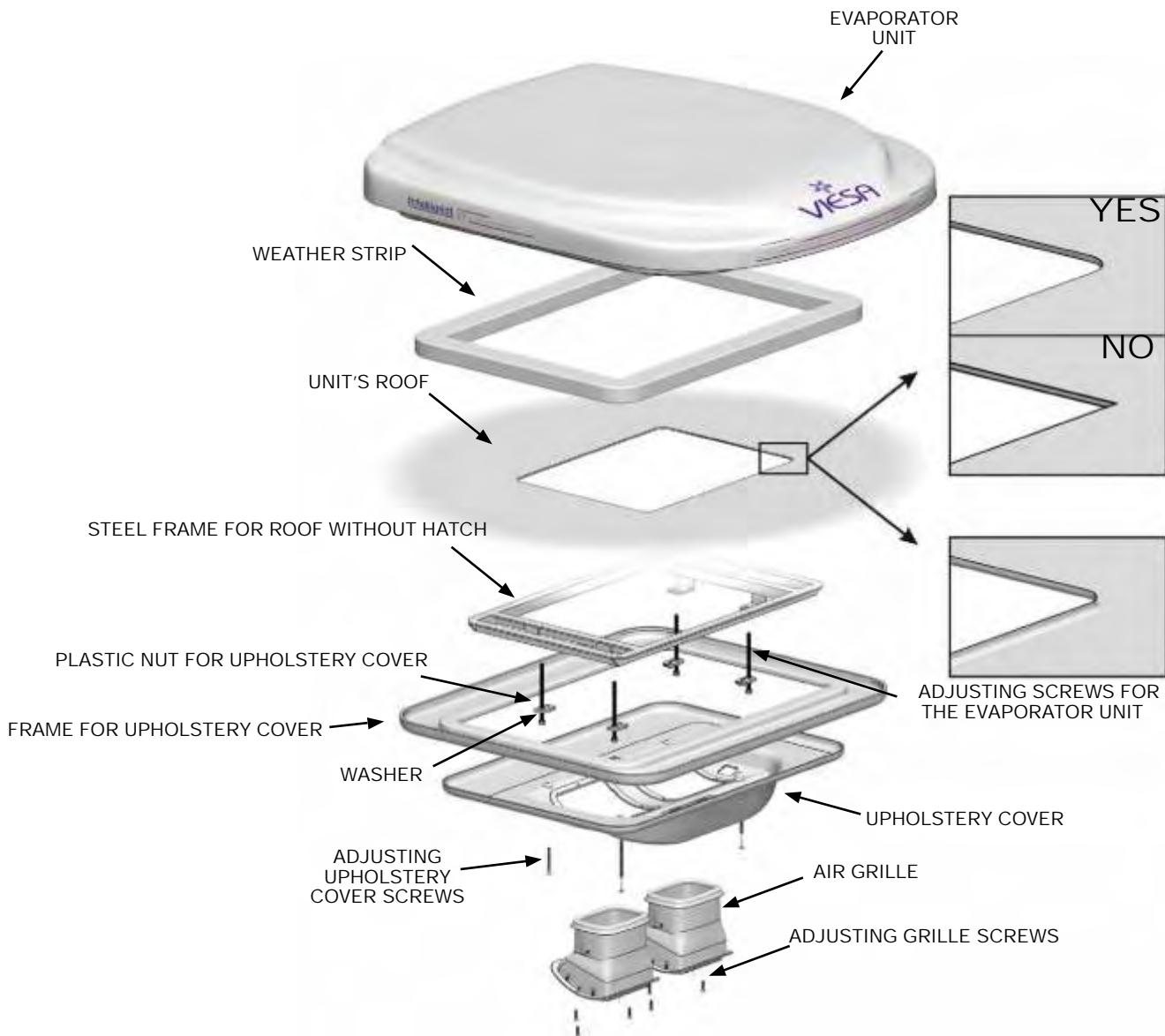
Maximum consumption is 7,5 A.



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**INSTALLATION PROCEDURE**


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**Units Without Hatch**


**⚠ DO NOT CUT ROOF OVER REINFORCING CHANNELS**

- a) A 40 x 30 cm rectangle has to be cut off the roof.
- a.1) Determine the suitable place where the evaporator unit will be placed.
- a.2) Mark the opening to be cut.
- a.3) Check from the inside that no reinforcement channels or electrical wires will be cut.
- a.4) Cut the roof and shave any roughness.

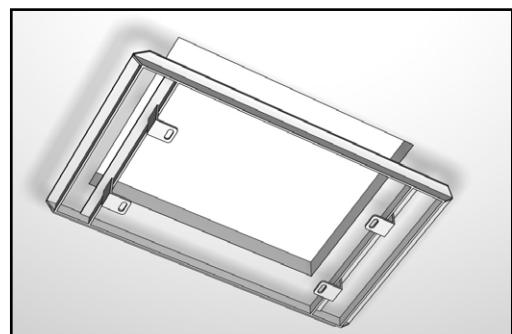
*Note: When cutting, be carefull not to make right angles on the corners. Corners must be round (see detail) in order to avoid future roof fissures.*

*Important: If the roof surface is a thin metal sheet, a 1cm. fold upwards has to be made all around the perimeter.*

- b) Glue the weather strip to the base of the evaporator.



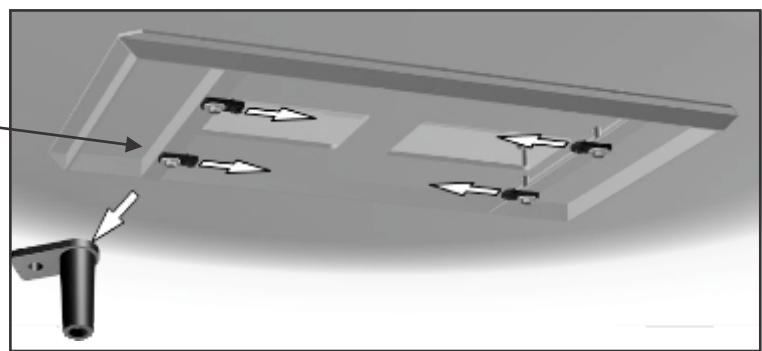
- c) Apply silicone glue on the underside of weather strip so as to avoid water filtration.



- d) Place and affix the evaporator unit to the roof.

- e) Place the steel frame in the interior against the ceiling.

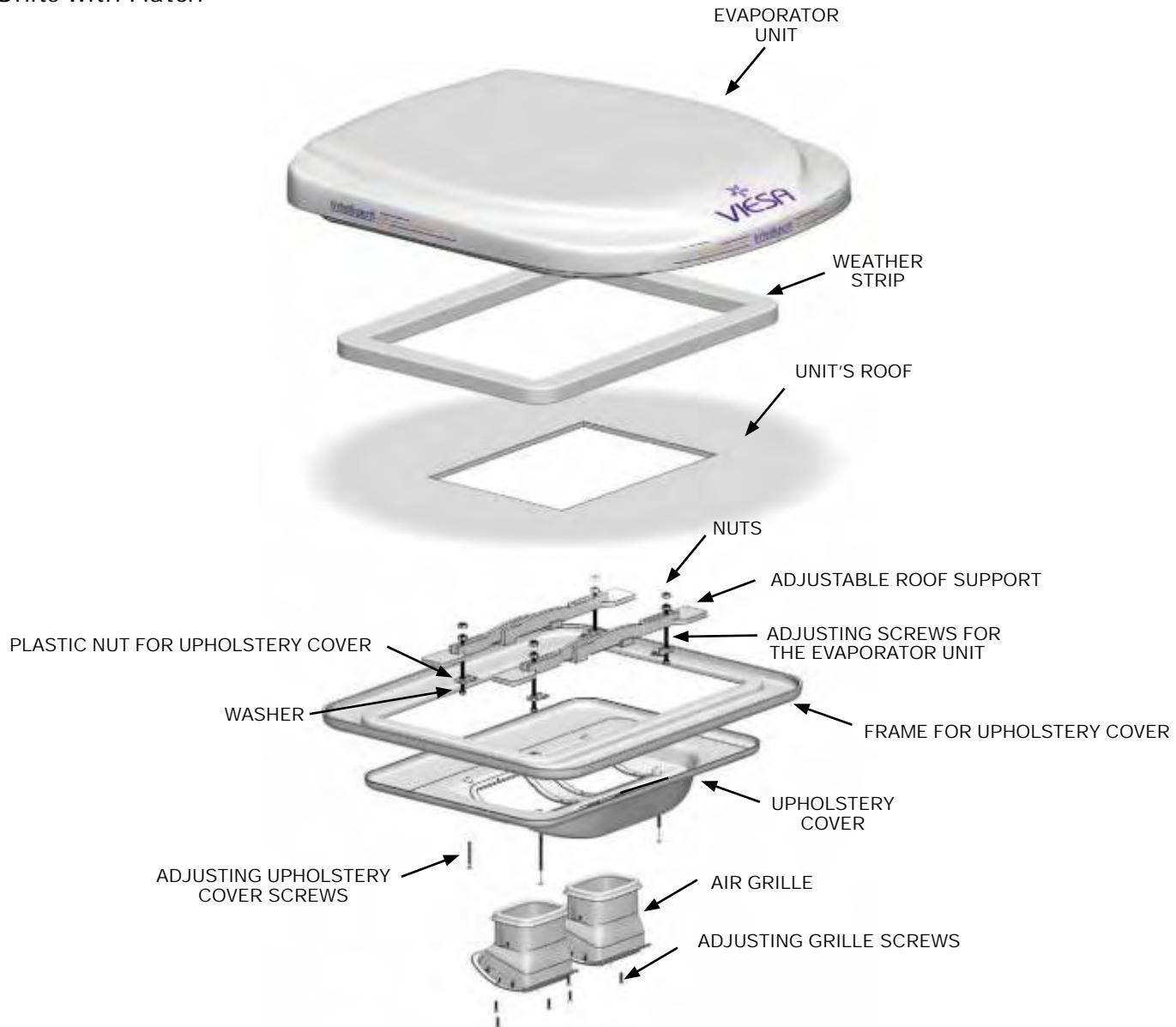
- f) Use the 4 screws (changeable length in accordance with the thickness of the ceiling) and tighten until the weather strip is compressed to 10 mm. approximately.



*Note: If there is enough space, use a nut and locking nut between the underside of the roof and the base of the evaporator unit.*

*Important: In roofs without reinforcements some support must be provided in order to maintain rigidity to the cab.*

## Units with Hatch



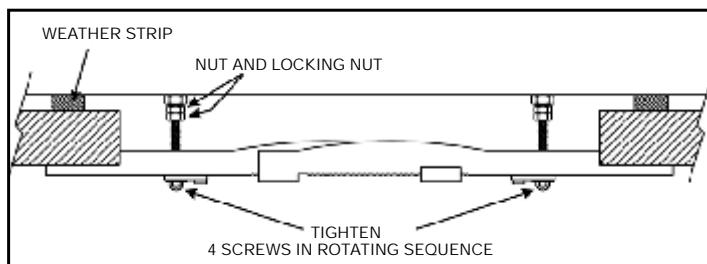
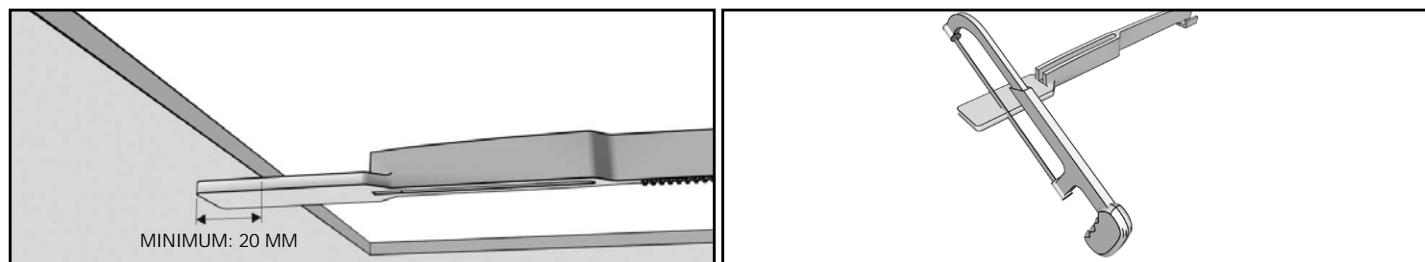
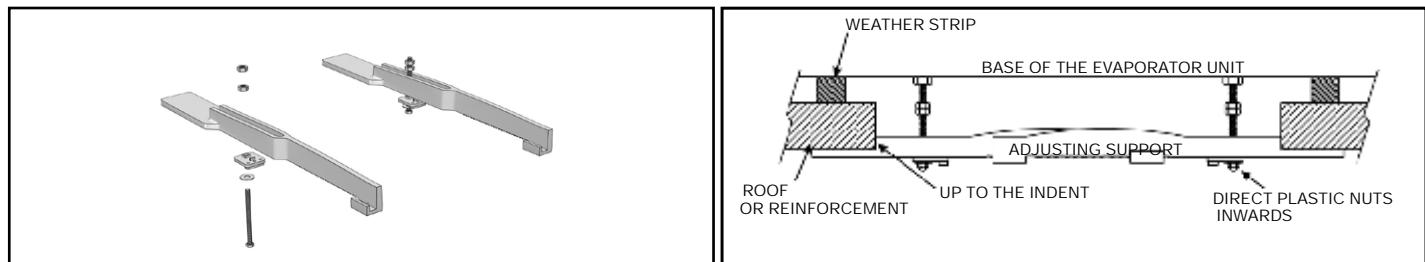
- Remove the original hatch.
- Glue the weather strip to the base of the evaporator.  
Make sure weather strip will sit on the roof, not over the opening.
- Apply silicone glue on the underside of weather strip so as to avoid water filtration.
- Place and affix the evaporator unit to the vehicle's roof.

- e) Place the adjustable roof supports in the interior against the ceiling.  
 f) Use the 4 screws (changeable length in accordance with the thickness of the ceiling) and tighten until the weather strip is compressed to 10 mm. approximately.

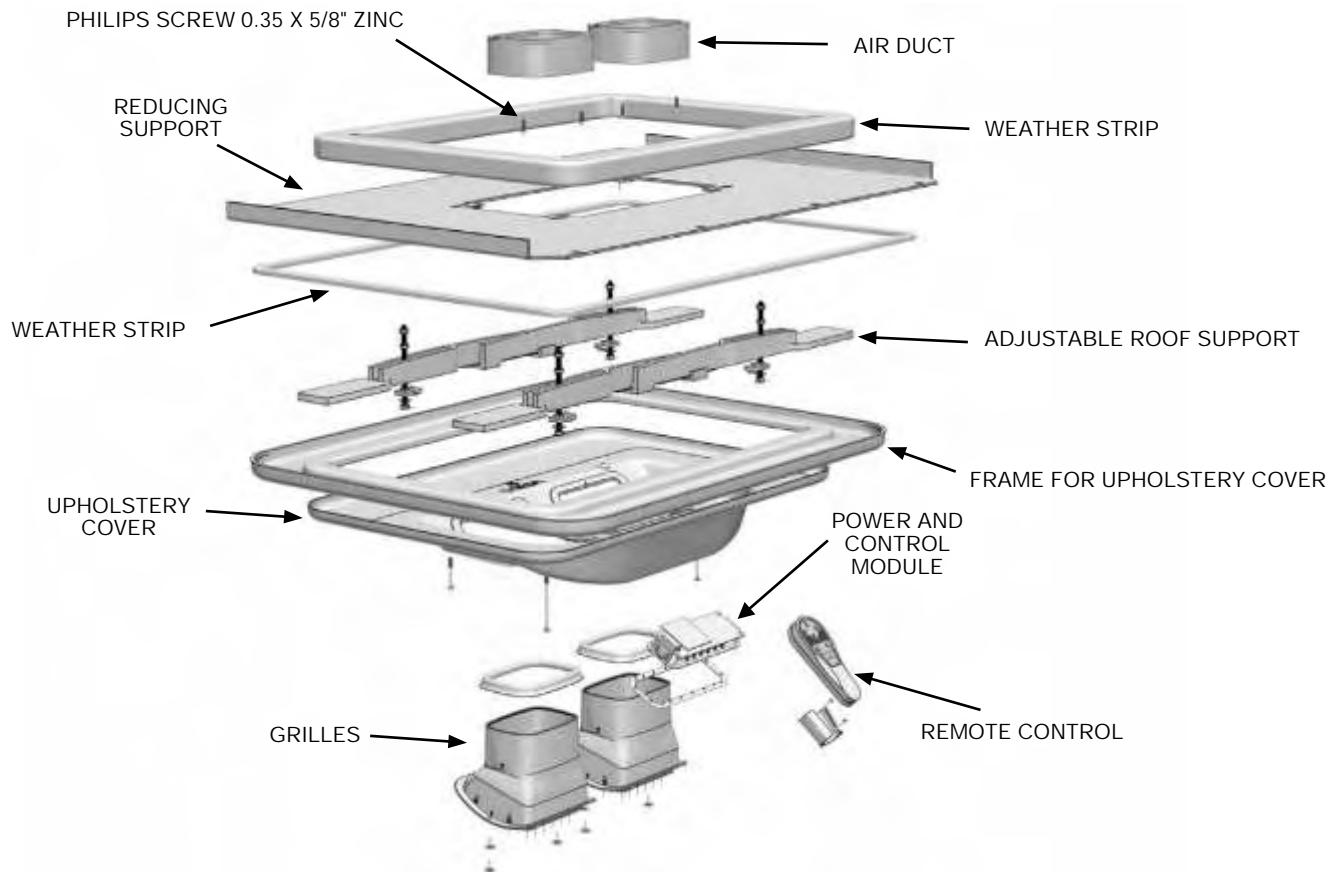
Note: If there is enough space, use a nut and locking nut between the underside of the roof and the base of the evaporator unit.

Note: If the adjustable supports are to long, cut them at their ends.

Important: In roofs without reinforcements some support must be provided in order to maintain rigidity to the cab.



## 2.2- UPHOLSTERY COVER AND ACCESSORIES



## 2.3- POWER AND CONTROL MODULE

It allows the following operations:

- To change the speed of the biturbo fan (8 speeds)
- Indication to change the evaporator
- To control the the water pump cycles
- To show the hour.
- To activate the alarm clock.
- To select the automatic mode.
- To select the auto power on/off
- Evaporator automatic drying.
- Turn off the system

## TECHNICAL CHARACTERISTICS

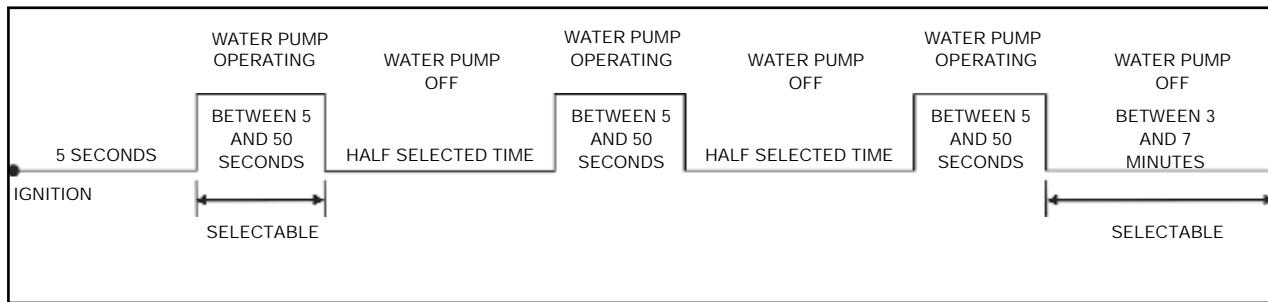
- a) Protection for polarity reversal.
- b) Parameter settings: Time system 24 H / 12 H, water pump time, drying period and maximum working time.
- c) Short-circuit protection in the water pump and in the turbo-fan and/or in its corresponding electrical connections.
- d) Protection for high voltage.
- e) Working tension: 12 volts.
- f) Auto switch off of the equipment for low tension in the battery.

*Voltage is sensed at the battery terminals*

- g) Display with symbols to indicate the different functions.
- h) Automatic disconnection due to lack of water in the tank.
- i) Predetermined maximum working time.

## CONTROL OF THE WATER

The module controls the operation of the pump cycle. It is showed in the following chart:



**Important:** When the system turns on, the command and control module causes 2 initial and consecutive water pump cycles half the selected water cycle time.

This is intended for an immediate evaporator moistening. For example: If the pump was set to turn off in 5 minutes, at first it will work twice every 2,5 minutes and then every 5 minutes.

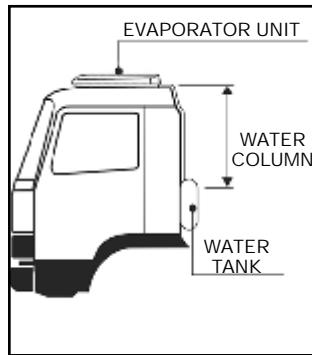
## LOW WATER LEVEL SENSOR

It monitors the presence of water in the tank; if there is a lack of water, it informs the operator about it with an audio-visual indication and it stops the operation of the water pump automatically.

## LOW WATER LEVEL SENSOR

It monitors the presence of water in the tank; if there is a lack of water, it informs the operator about it with an audio-visual indication and it stops the operation of the water pump automatically.

## Water Cycle Setting

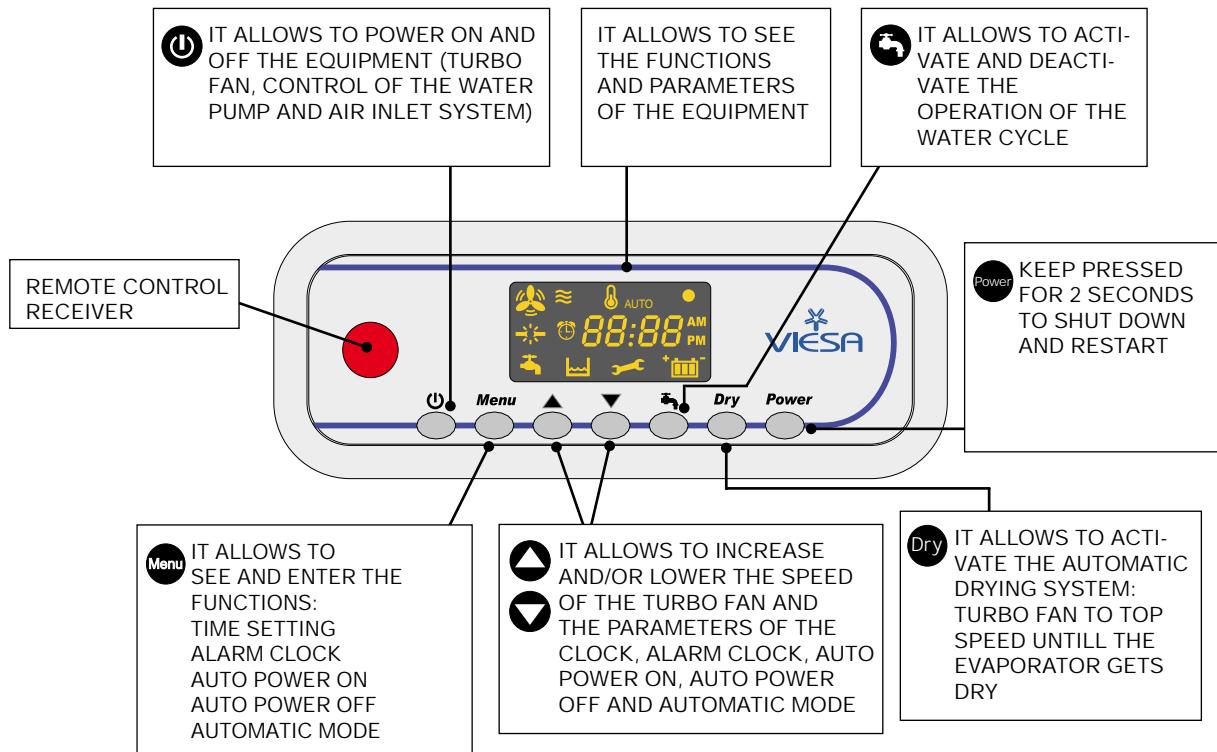


WATER COLUMN	WORKING TIME
0.40 - 1.20 mts.	7 seconds
1.25 - 2.00 mts.	10 seconds
2.00 - 3.00 mts.	13 seconds
Higher than 3.00 mts.	Up to 50 seconds

Water Cycle Setting is performed during Command and Control Module Configuration.

## 2.3- BOARD INDICATIONS

### BOARD



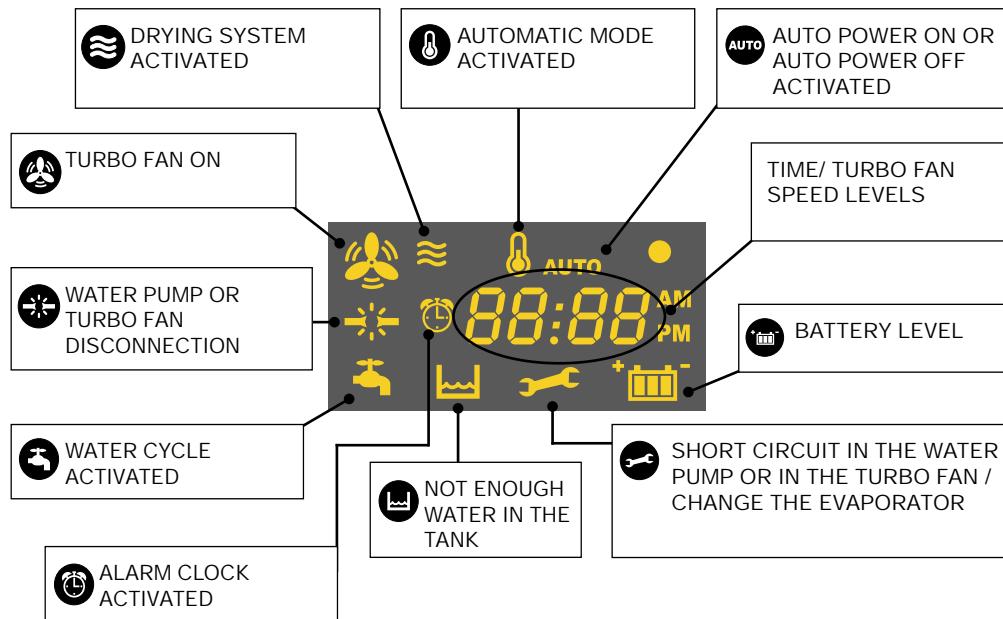
### REMOTE CONTROL

Performs all the functions described above.

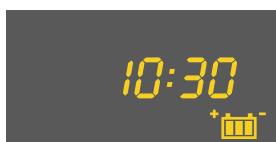
**Dry **: It activates the drying system; turbo fan to top speed until the evaporator gets dry.



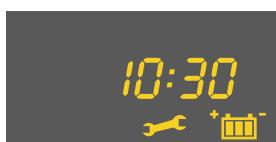
## DISPLAY INDICATIONS



## PERMANENT INFORMATION



- Clock.
- Battery level: If the voltage decreases to 11,8 V (factory setting), a blinking display will appear and the equipment will start slowing down automatically, decreasing progressively the turbo fan speed

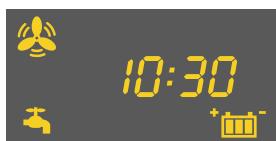


The command and control module registers the working hours, and after working for 546 hours, turns on permanently indicating the evaporator needs to be replaced.

*Working hours are counted  
only when the turbo fan or the water pump is on*

*Important: Every time the evaporator is replaced  
the working time must be  
set to 00:00 (zero) (see Command and Control Module configuration)*

## TURBO FAN



By pressing the turbo fan and the pump control system will be activated. By pressing again the turbo fan and the pump control system will be disconnected.

This equipment has 8 speed levels, which can be changed by pressing  or .



Note: keeping pressed one of these the buttons, the speed will vary in sublevels (a total of 24), which will not be displayed and will not emit any sound when passing from one sublevel to another.



If the turbo fan is disconnected  is displayed and the system will make a sound. Will disappear after the problem is solved and the equipment is turned on by pressing .

In case the turbo fan consumes more than usual,  and  will be displayed and the system will beep 3 times.

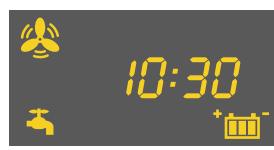
It will disappear after the problem is solved and the equipment is turned on by pressing .

Note: If the turbo fan consumes more than 11 Amps, it is considered as over-consumption.

## WATER PUMP

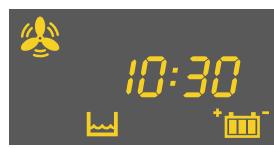


When pressing  the water pump will turn off .



When pressing  again, the water pump will turn on.

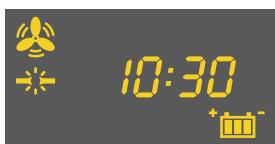
The  key will activate and deactivate the pump control independently of whether the equipment is activated with  or not.



If there is not enough water in the tank, the pump will not work  will be displayed and the system will make a sound.

Important:

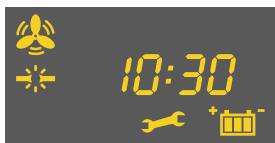
- If the equipment is turned off,  will turn off when water is poured into the tank.
- If the equipment is turned on,  will turn off when water is poured into the tank and the  key is pressed.



If the pump is disconnected,  will turn on and the system will make a sound. Will disappear after the problem is solved and the pump control is turned on by pressing .

*Note: the turbo fan will continue working.*

*Important: The indication of pump disconnected will only show when the pump system is activated.*



In case the pump consumes more than usual,  and  will be displayed and the system will beep 3 times. Will disappear after the problem is solved and the pump control is turned on by pressing .

*note: If the pump consumes more than 7Amps it is consider over-consumption.*

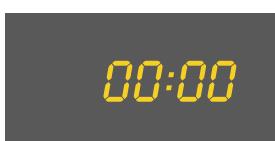
## Functions

With the  key the user has access to different functions:

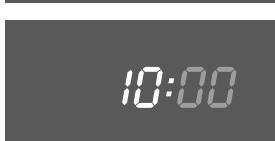
- Time setting
- Alarm clock
- Auto power on
- Auto power off
- Automatic mode

## Set Time

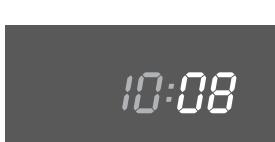
It allows the operator to set the equipment clock.



Press  until **00:00** is displayed and then press .



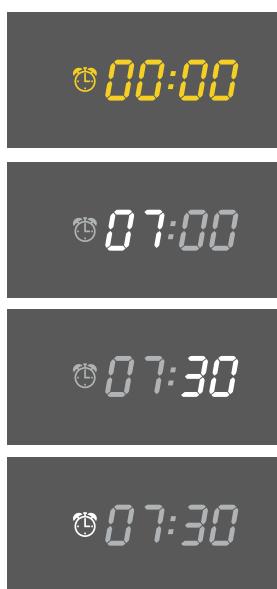
The hour blinks, press  or  to set the hour.



Pressing  select the minutes. Use  or  to set the minutes.

*note: To confirm the hour, wait 5 seconds or press .*

## Alarm clock



Press **Menu** until  is displayed and then press .

The hour blinks, press  or  to set the hour.

Press  to select the minutes.  
Use  or  to set the minutes.

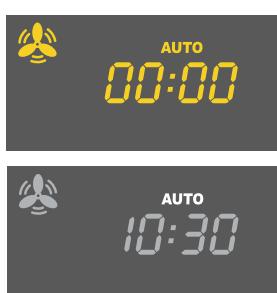
Using  the alarm clock is selected   
Then  blinks, press  to activate or press  to deactivate.

*Note: To confirm alarm clock, wait 5 seconds or press .*

*To turn off the alarm clock, press any key  
from the control panel or from the remote control, except  
for .*

## Auto Power On

It allows the operator to turn on the equipment automatically at a pre-programmed time.



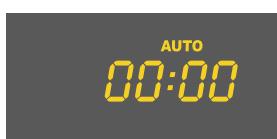
Use **Menu** until  and  appear and then press   
Program the clock (see "Set Time").

Use  to select   
Then  blinks, press  to activate it or press  to deactivate it.

*Note: To confirm auto power on, wait 5 seconds or press .*

## Auto Power Off

It allows the operator to power off the equipment automatically at a pre-programmed time.



Use **Menu** until  is displayed and then press   
Program the clock (see "Set Time").



Using , is selected.  
Then blinks, press to activate it or press to deactivate it.

*note: To confirm auto power off, wait 5 seconds or press .*

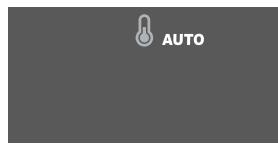
*Note: The power off system can be set even when the equipment is off.*

### Automatic Mode

It regulates automatically the speed of the turbo fan according to the exterior temperature.



Use until appears and then press .



Then blinks, press to activate it or press to deactivate it.

*Note: To confirm automatic mode, wait 5 seconds or press .*

*Explanation: The turbo fan and the water pump will not power off even if the exterior temperature is very low; in this case the blower will continue working at the minimum speed. Take into account the following chart :*

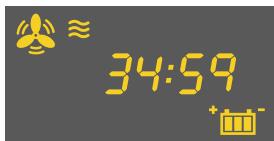
EXTERNAL TEMPERATURE	SPEED	
29°C or higher	84°F or higher	8
28°C	82°F	7
27°C	81°F	6
26°C	79°F	5
25°C	77°F	4
24°C	75°F	3
23°C	73°F	2
22°C or lower	72°F or lower	1

*Important: If the automatic mode is activated and the temperature sensor is disconnected, the turbo fan will continue working at its minimum speed.*

### DRYING SYSTEM

This unit is equipped with a drying feature which operates the fan to dry out the evaporator.

*Important: If the equipment will remain off for more than 48 hs., activate the drying system to avoid bad smells when restarting it.*



When pressing  the equipment will dry the evaporator, starting a countdown and then it will finish automatically.  
To deactivate the drying system, press .

*Note: the drying time of the evaporator is factory set to 35 minutes. This is the time we deemed required for normal humidity conditions. This time can be changed.*

## POWER OFF

When pressing for 2 seconds the power off button  the equipment will completely turn-off (Including the display)

To restart it press 

## MAXIMUM TIME IN SERVICE

Every time the equipment is turned on with , it will work for a maximum period of time previously programmed and then it will turn off automatically. By default, the period is set to 9 hours. Set period can be changed during initial configuration at installation.

## COMMAND AND CONTROL MODULE CONFIGURATION

Press  and  simultaneously during 2 seconds and  will turn on indicating the "configuration" mode.

The module is factory configured except for the water cycle.

*Very Important: If water cycle is not configured the module will not exit from "configuration" and the equipment will not work.*

To change factory settings, proceed as shown in the following table

*Note: when pressing 

*Note: ' indicates minutes.  
" indicates seconds.**

FACTORY CONFIGURATION	PARAMETER	MODE
	Time format 12 or 24 h.	Using  and  select 24 h or 12 h. Then press .
	Water Cycle Working time of the pump.	Using  and  change the values. Range allowed: 5" to 50". Then press .
	Water Cycle Period of time the pump is not working.	Using  and  modify the value. Range allowed: 3' to 7'. Then press .
	Shear stress.	Using  and  modify the value. Values allowed: 10,5 V. to 12 V. (numbers increase one by one). Then press .
	Drying time.	Using  and  modify the value. Range allowed: 20' to 60'. Then press .
	Maximum working time.	Using  and  modify the value. Range allowed: 4 to 12 hours. Then press .
	Working time (evaporator replacement).	- If it is in <b>00:00</b> press - If the evaporator filter was changed press  to start from scratch, then press .
	The display turns off.	To restart press .

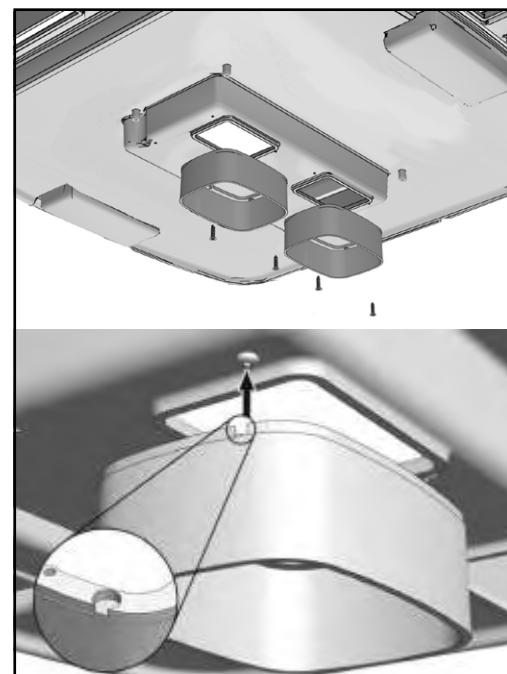
## 2.5- UPHOLSTERY COVER



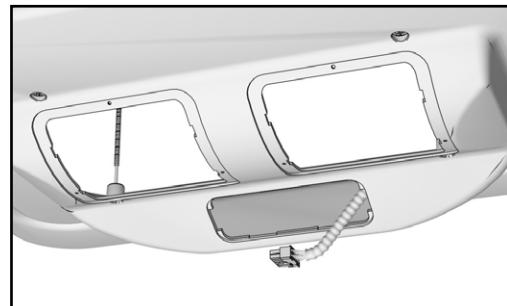
### INSTALLATION PROCEDURE

1- Insert the air ducts into the evaporator's base openings and affix them with the zinc screws.  
Note the holes for screws on air ducts.

**Important:** *Cut the air ducts if needed.  
Taller air ducts can be ordered for very thick ceilings.*

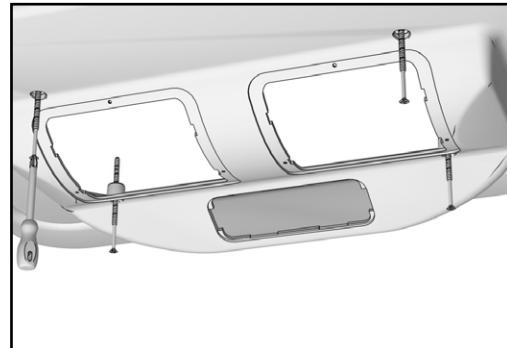


2- Place the upholstery cover and connect the electrical installation. Pass the electrical connector for the command and control module out of the upholstery cover.

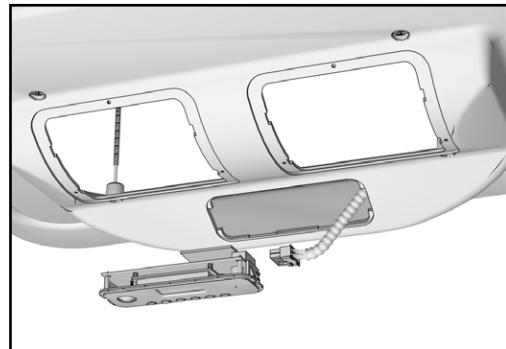


3- Place the upholstery cover with the display oriented to the front of the cabin.

4- Affix the upholstery cover with the 4 screws (without tightening).



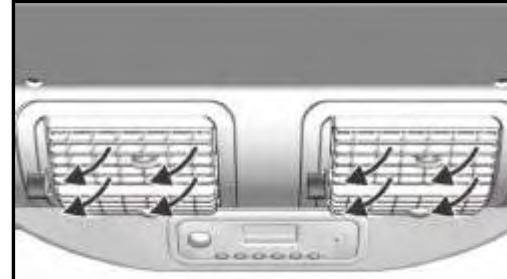
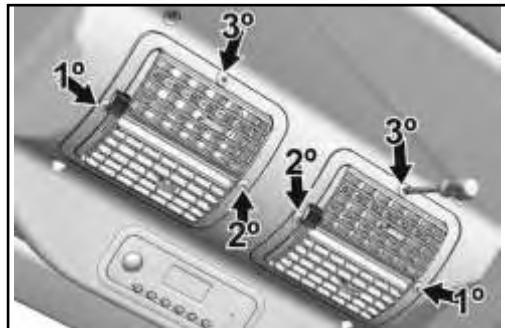
5- Connect the command and control module to the electrical installation.



6- Press and insert the command and control module to the upholstery cover.



7- Introduce the air grilles with their weather strips.



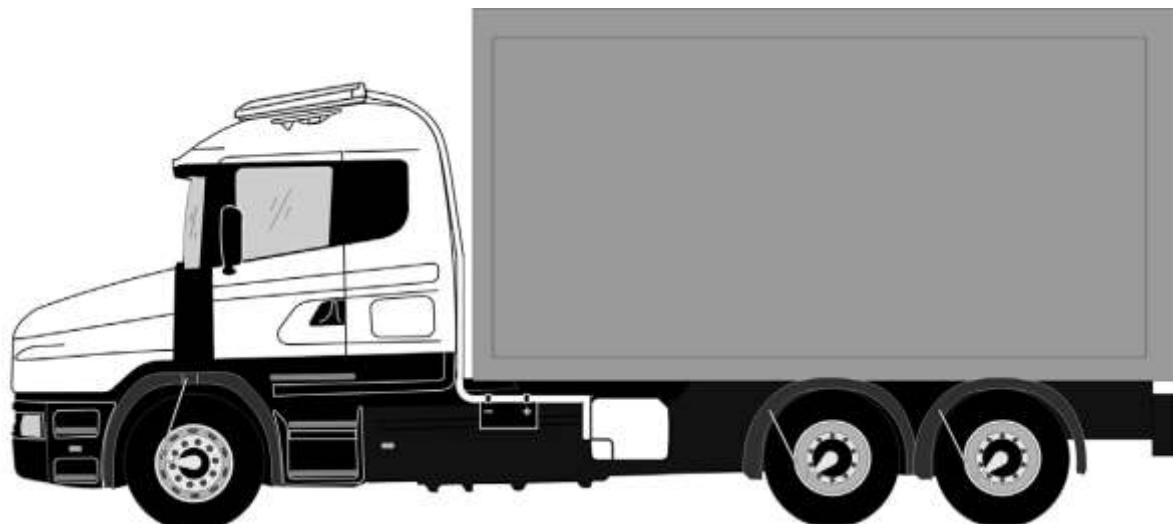
8- Fasten the air grilles to the upholstery cover with the screws, in the indicated sequence.



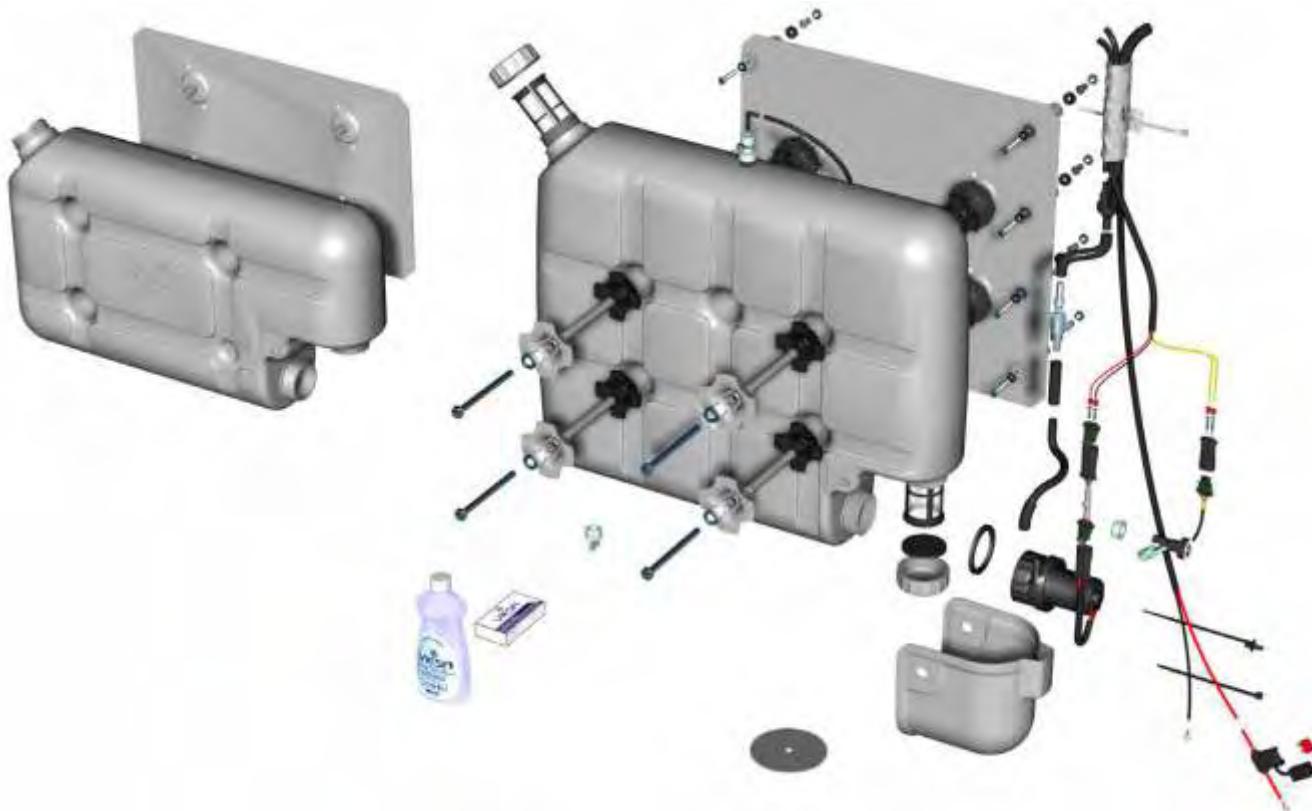
9- Tighten, without forcing, the 4 upholstery screws until covering the original upholstery without gaps.

## 2.6- WATER TANK

Placement



## WATER TANK MODELS



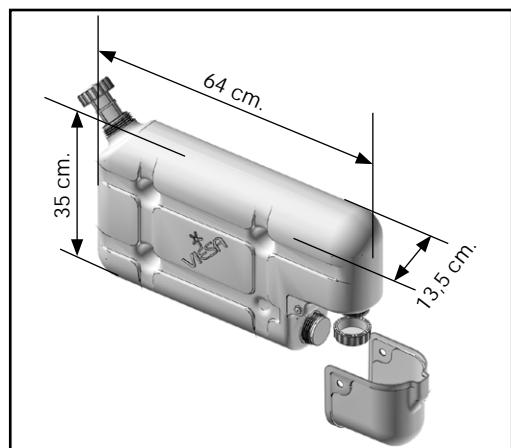
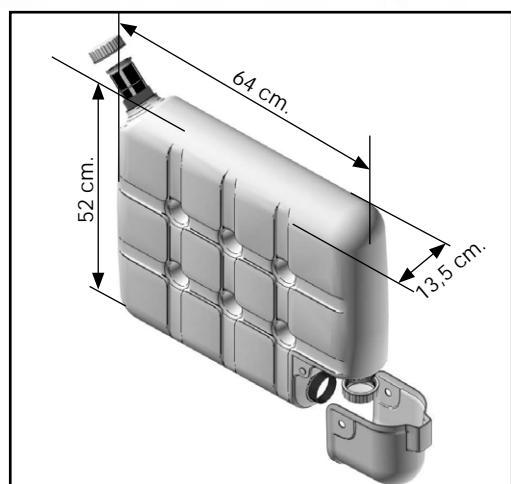
There are two models:

Standard: 32 litres. Dimensions: 64 x 52 x 13,5 cm.

Small: 20 litres. Dimensions: 64 x 35 x 13,5 cm.

Made of a non translucent material which assures darkness inside and prevents fungi formation on the interior walls.

Resistant to vibrations and rapid changes in temperature.

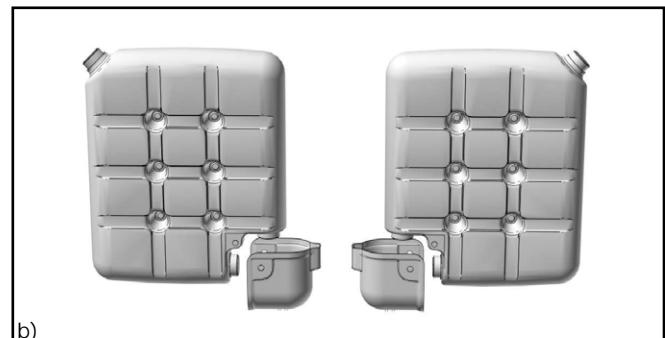
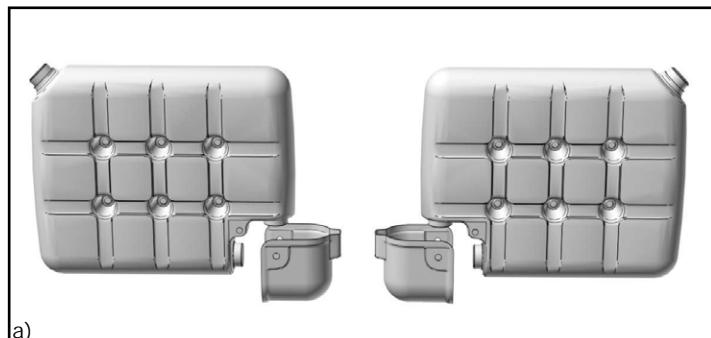
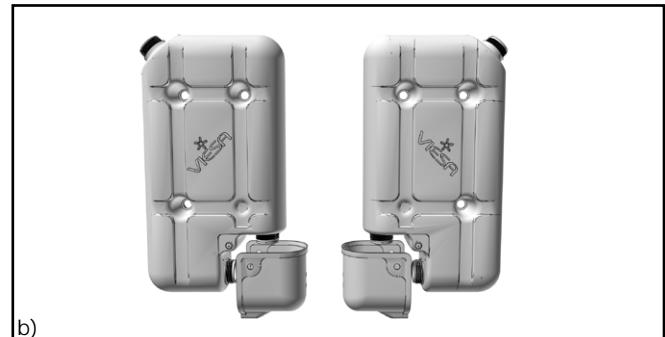
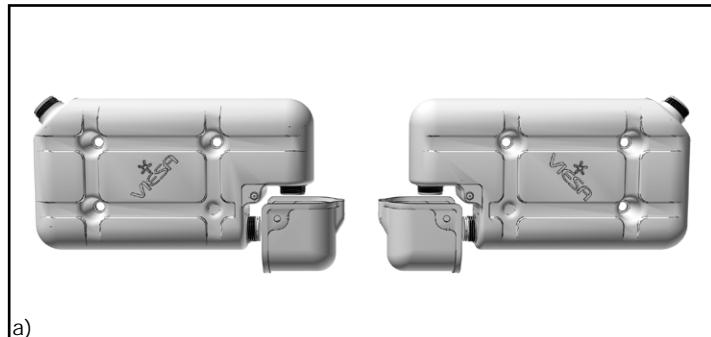


## INSTALLATION

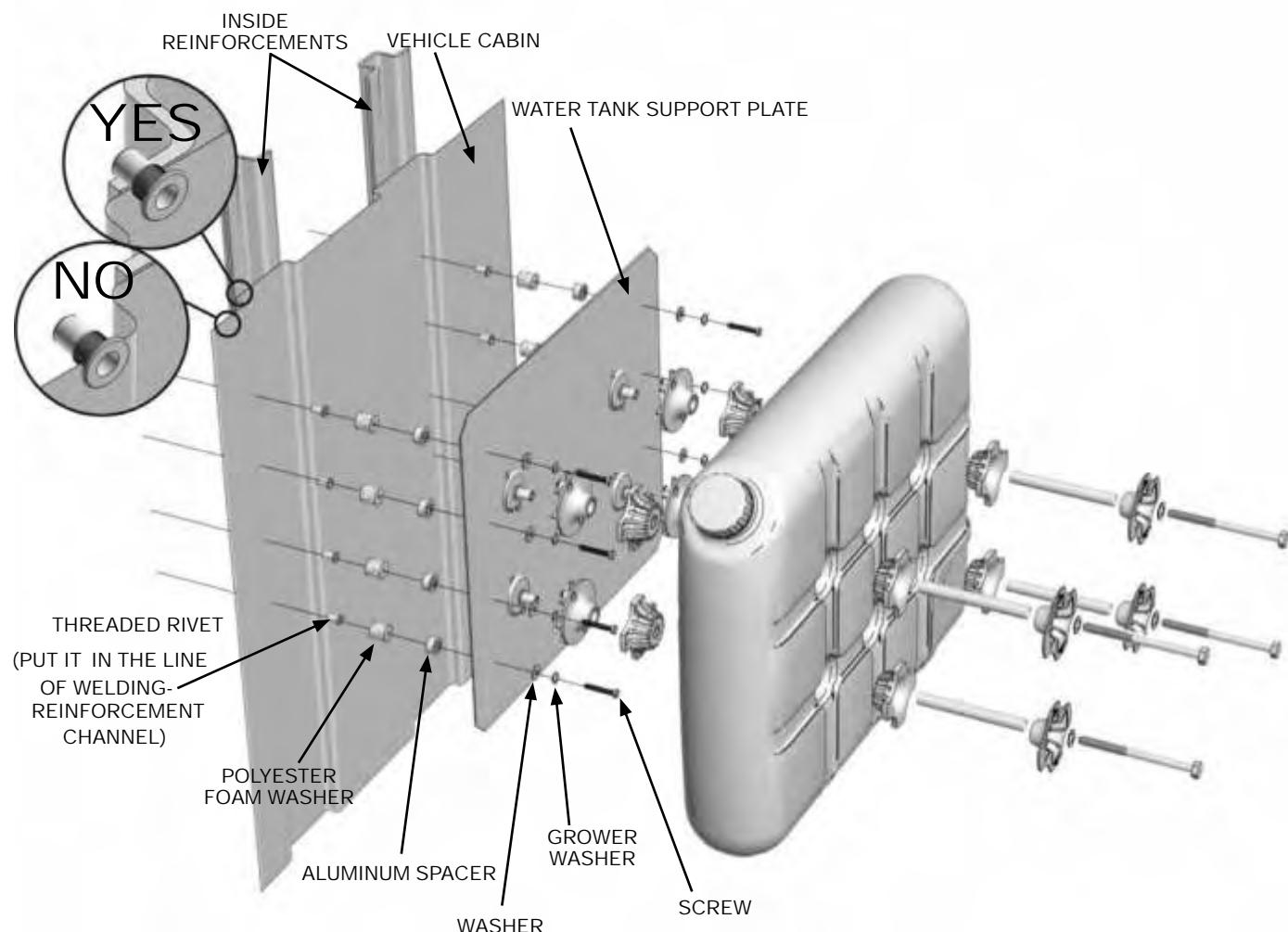
- a) at the back of the cabin.
- b) in the chassis.

note: *Do not place it near the exhaust pipe.*

Placing the tank horizontally (a) is preferred. Use vertical placement (b) only if not possible to place it horizontally.

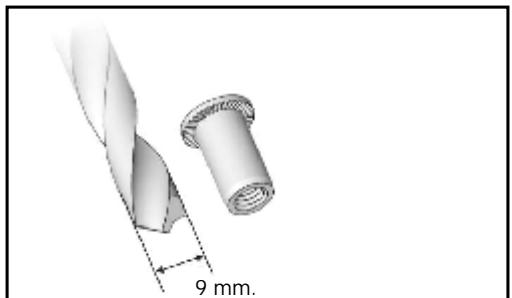
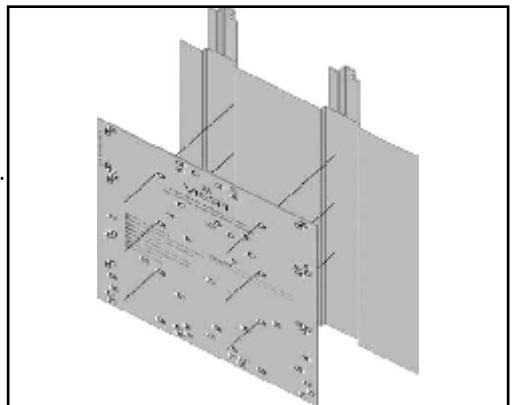


**VERY IMPORTANT:**  
NEVER APPLY TANK TO CABINS WITHOUT REINFORCEMENTS



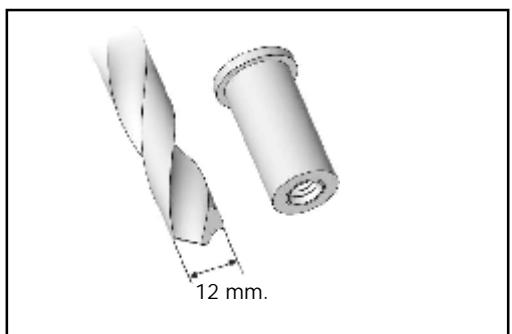
Identify the place on the rear part of the cabin where the tank will be installed.

Use the support plate to mark the points of attachment to the cabin.  
ALLWAYS OVER THE WELDING LINES prove with a 5 mm. diameter drill bit and then perforate with a 9 mm. drill bit.

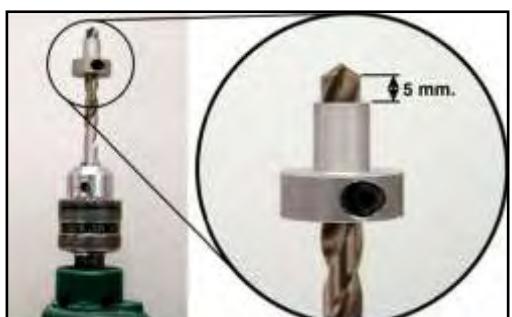


If using neoprene rivets, use a 12 mm. drill bit.

*Neoprene rivets are used in units with fibreglass cabins.*



**Important:** When using the 5 or 9 mm. drills bits, use a depth stop, to prevent damaging the inside upholstery.



Introduce and affix the threaded rivets provided.

For neoprene rivets insert them (manually) up to the brim. Then adjust the screws.

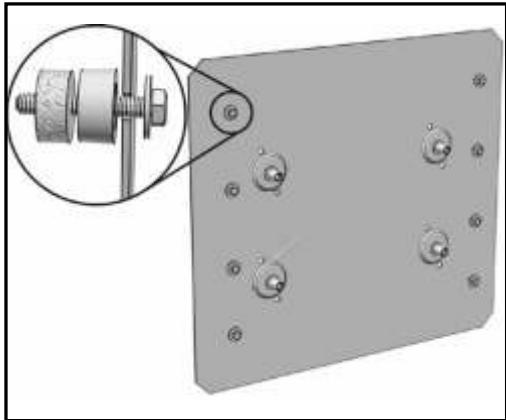
Install the water tank support plate to the cabin taking into account that there must be a separation of 10 mm. between the plate and the cabin. Use the spacers provided.

Place the polyester foam washers in order to avoid water or humidity filtrations.

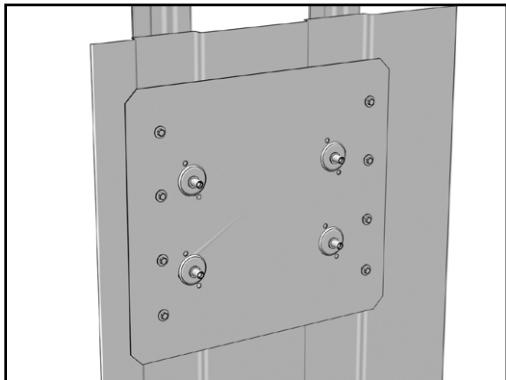


**Important:** Use adequate separators to compensate uneven surfaces.

Before attaching the support plate to the cabin, set the tank's fixing screws and washers provided.

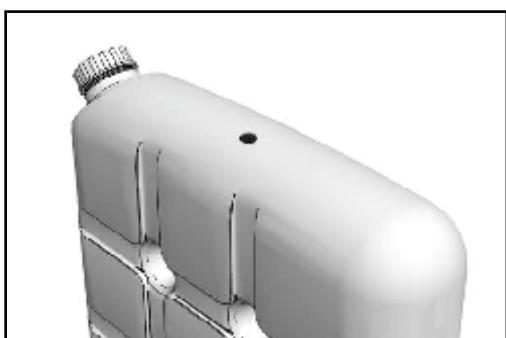


Attach the support plate firmly.

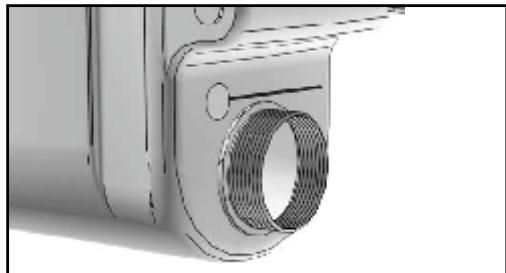


When using the water tank on vertical position; you have to make 3 holes of 22 mm. in diameter. Plug original holes with provided plugs.

- For venting: On the upper part of the tank and at its center.

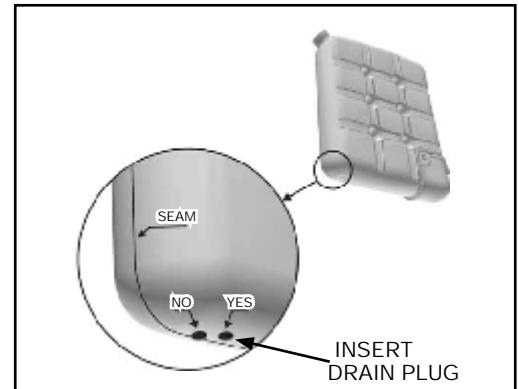


- For the level sensor: On one of the ends of the marked line where the water pump will be placed.



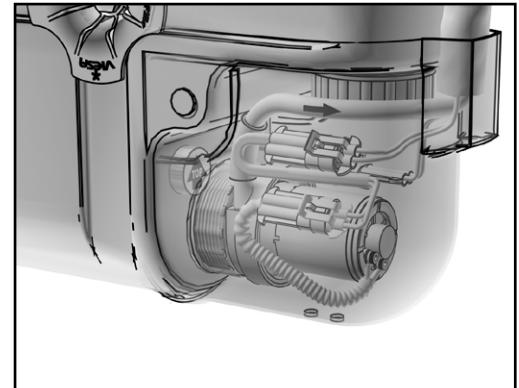
- For draining, at the bottom of the water tank and on the same side of the water tank cap.

**Important:** Remove shavings.



Place the water tank on the support plate and affix with the provided screws and washers.

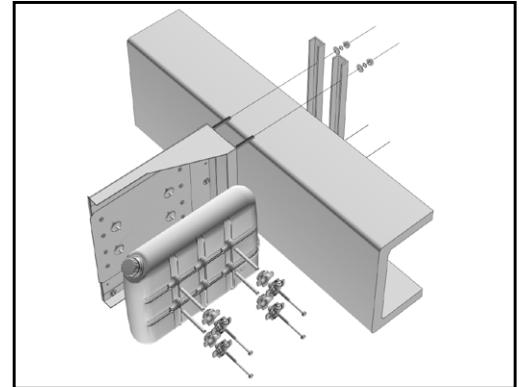
Once the tank has been installed, cut the cord from the evaporator containing hoses and wires. See electrical and hydraulic diagrams in order to assess their length.



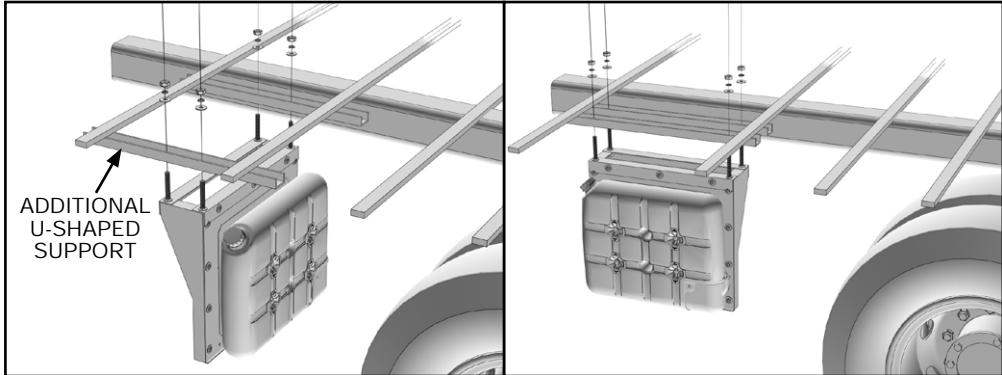
## 2.7 - WATER TANK SUPPORT (OPTIONAL)

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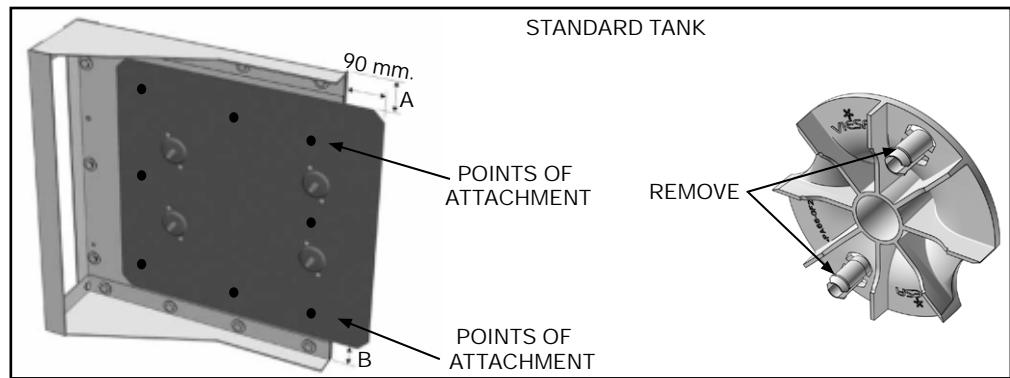
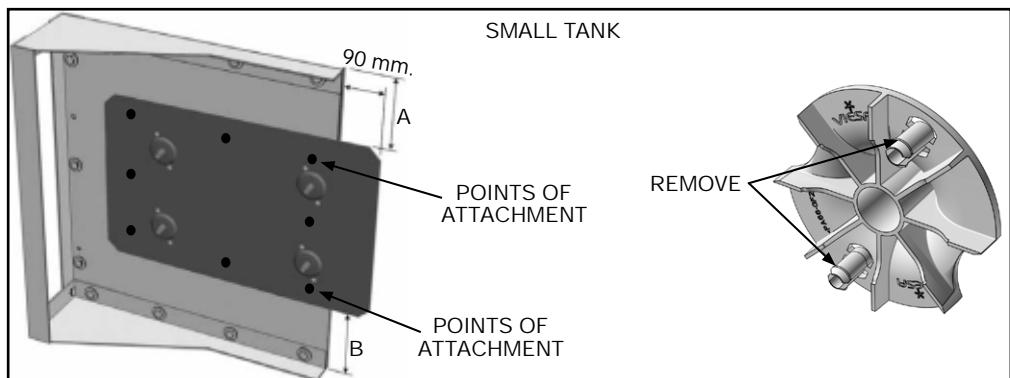
Depending on the vehicle, the water tank support can be placed parallel or perpendicular to the chassis frame.  
Never drill the frame's flange.



*Additional "U" channel pieces may be necessary.*



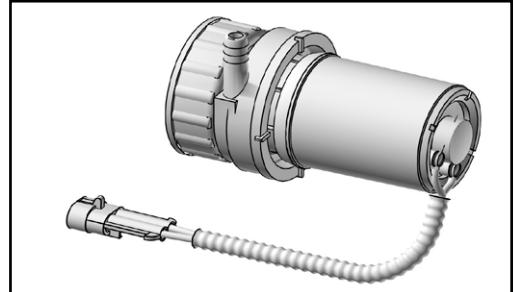
Important: distances A and B must be equal.



## 2.8- WATER PUMP

### Technical Characteristics

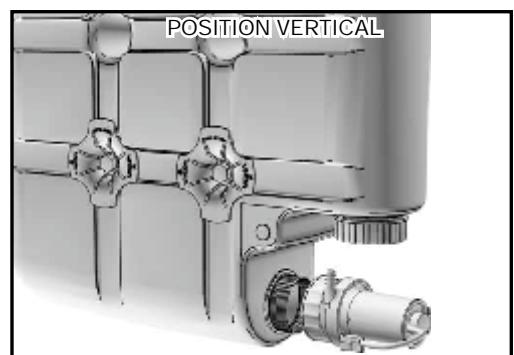
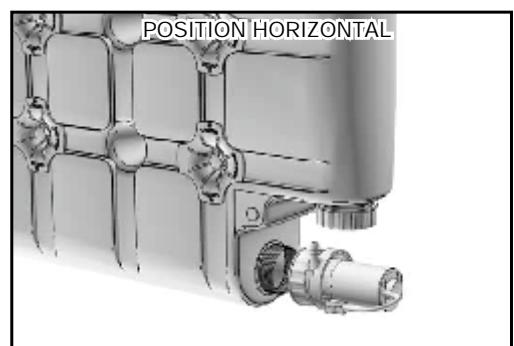
- a) Centrifugal - Sealed
- b) Consumption: 4 A.



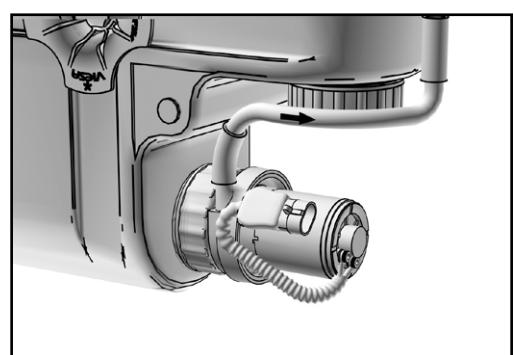
### Installation

Screw the pump directly to the tank's opening, according to the picture.

Make sure that the rubber gasket seats correctly against the tank's wall.

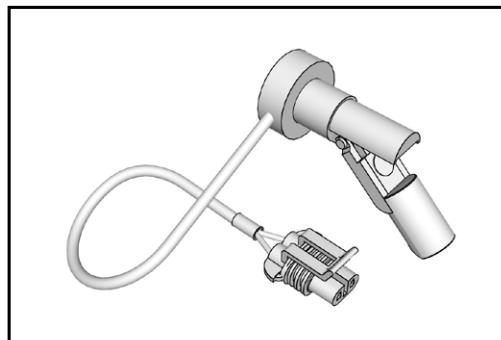


*Important: Before adjusting the pump completely, insert the shorter length of the preformed hose to the pump's output nipple.*



## 2.9- LEVEL SENSOR

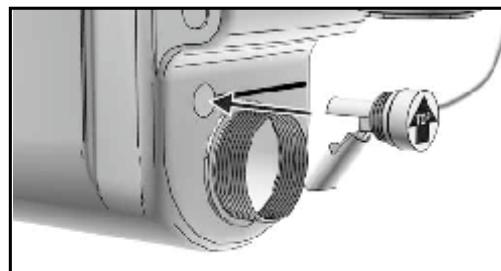
Controls the water pump operation.



Introduce the level sensor according to the figure.

Keep the marked arrow "UP".

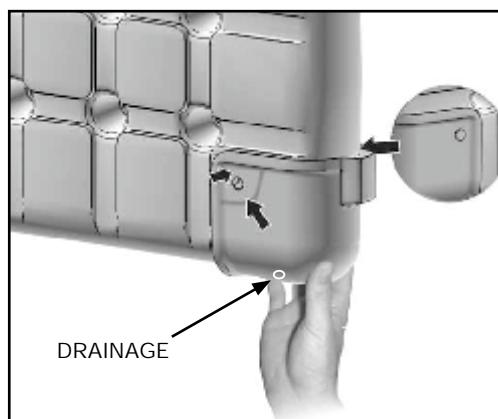
Use the provided rubber gasket.



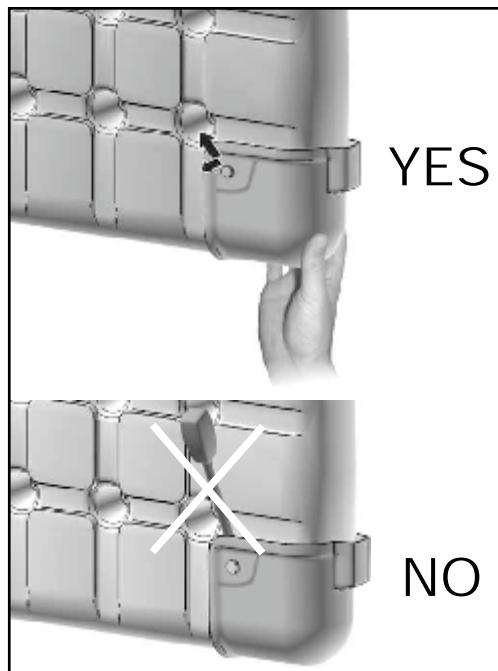
## 2.10- WATER PUMP COVER

To place the water pump cover insert first one of the holes in the water tank pin an then, manually, insert the second hole.

*Note: Make sure not to obstruct the water pump cover draining hole. If necessary, make an additional hole.*



*Important: Don't use tools to remove the water pump cover.*

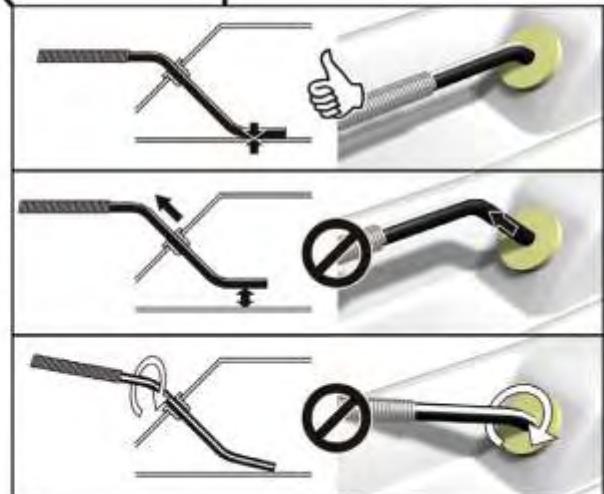
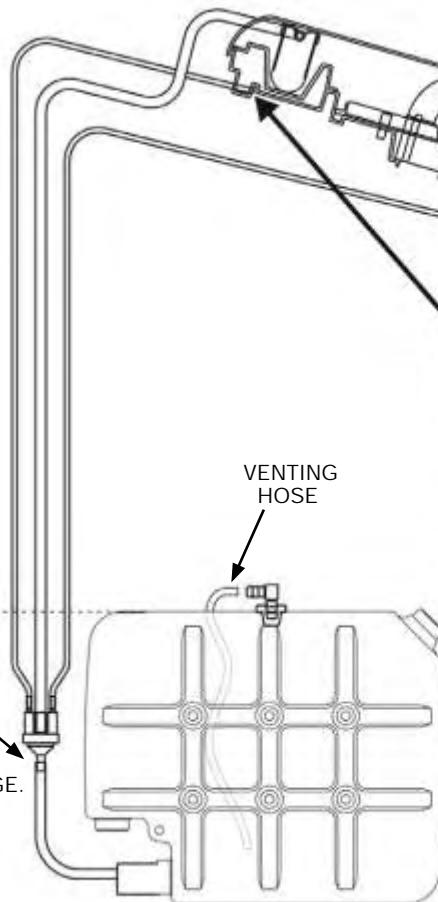


## 3- CONNECTIONS

### 3.1- HYDRAULIC

THIS VALVE MUST BE  
INSTALLED BELOW THE  
THE UPPER EDGE OF THE  
WATER TANK.

IN TILT CABINS  
OR WATER TANKS INSTALLED  
ON THE CHASSIS  
THE VALVE MUST BE INSTALLED  
AT MORE THAN 1 M BELOW  
THE EVAPORATOR'S LOWER EDGE.

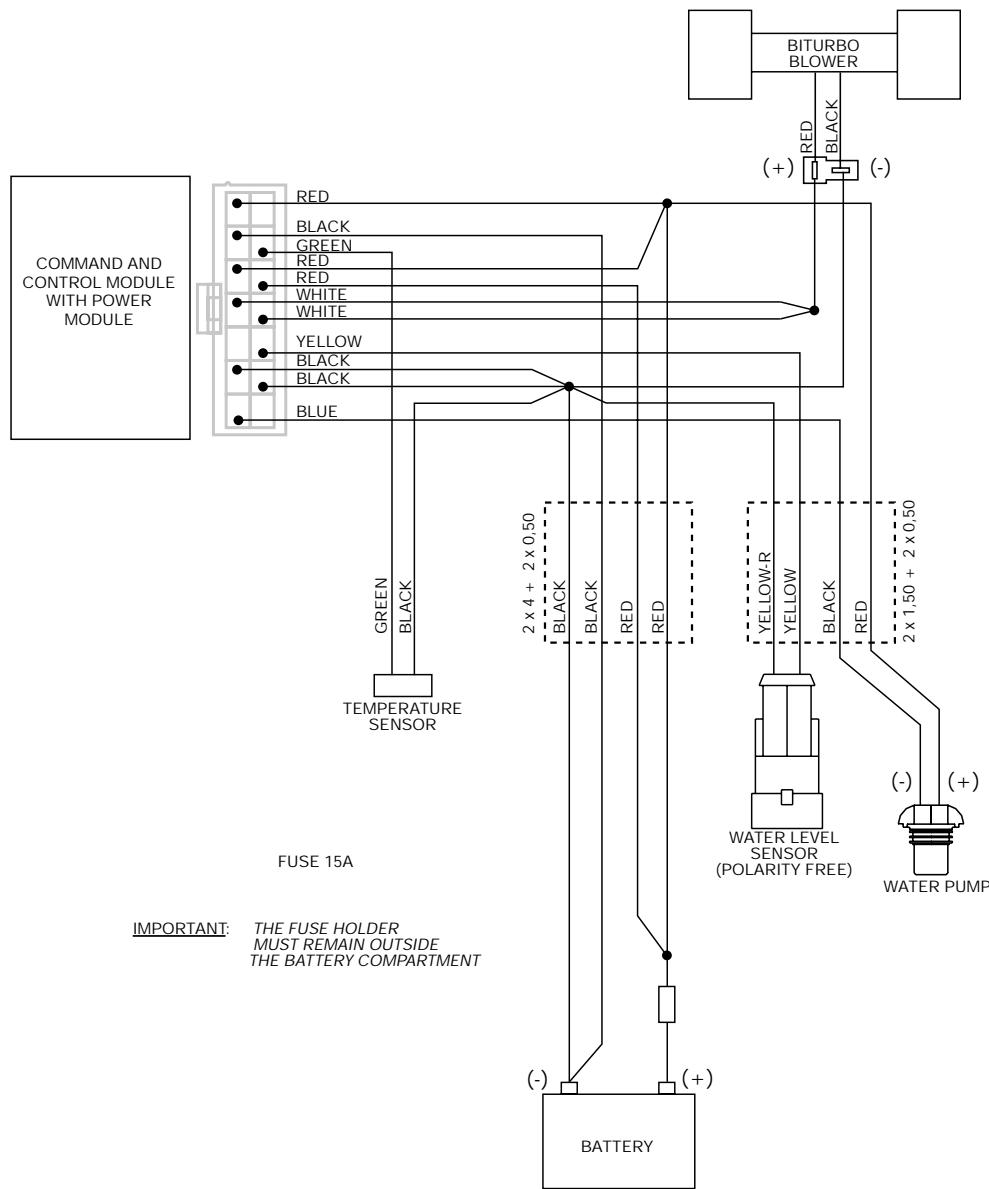


*Note: cut the tubes accordingly. The grey cord wrap must cover all the hoses and wires until it reaches the pump cover.*

*Important: to install the elbow (for ventilation) in the tank, make a 22 mm. diameter hole in the center of the top the tank (remove shavings). Use the elbow provided.*



### 3.2- ELECTRICAL



**⚠ Very Important:** The fuse must be installed at the end.

Important: In ADR (dangerous goods Transportation), encase and protect the electrical wiring in approved fire-proof material.

Note: use the provided wire terminals, terminal covers and sockets. Solder wire terminals and / or joints with tin.

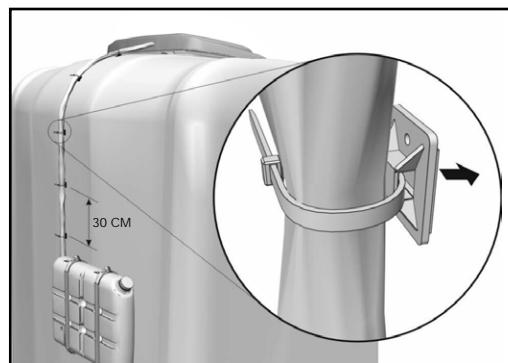
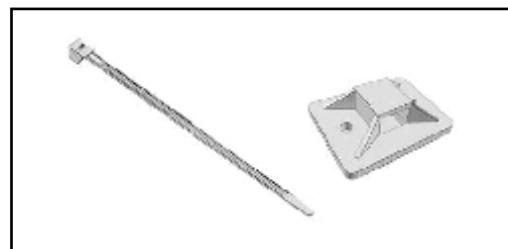
The connection of the pump and level sensor must remain inside the pump cover.

Important: the positive cable (+) is the last element to be connected.

## ATTACHING THE ELECTRICAL AND HYDRAULIC CONNECTIONS

Use the self-adhesive tie bases and plastic ties provided to attach the electrical and hydraulic connections from the evaporator down to the water tank.

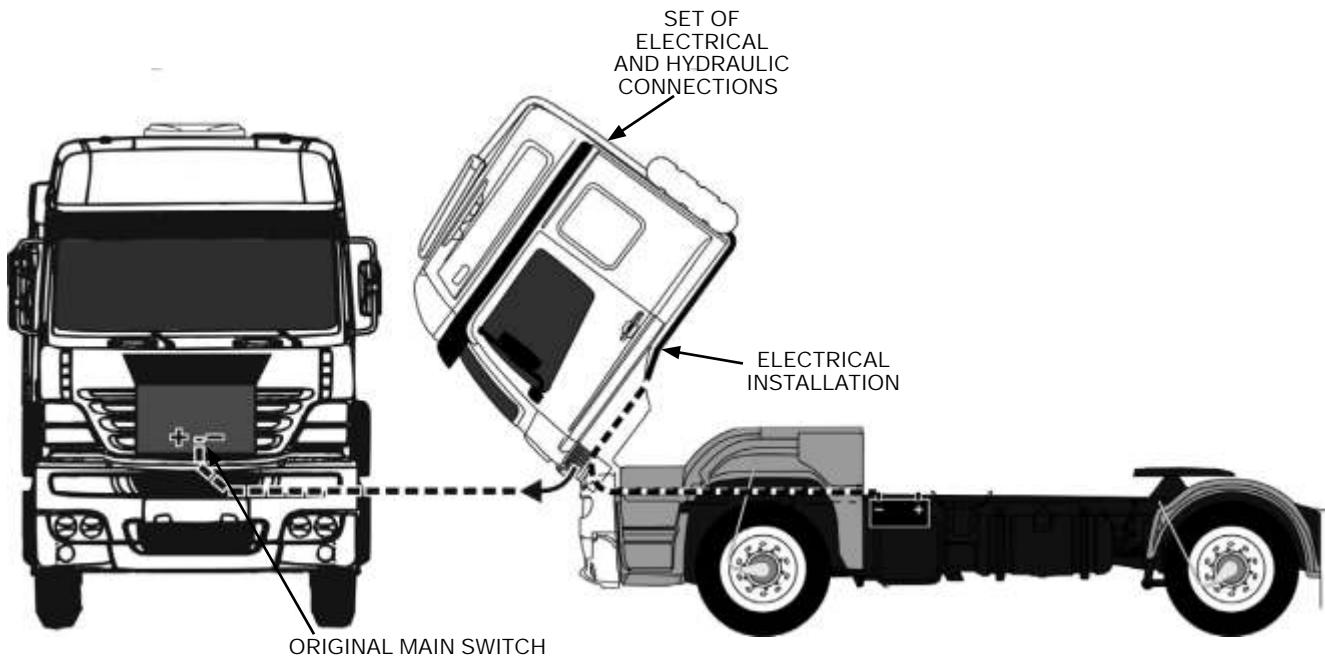
Note: *Clean the surface where the adhesive will be placed.*



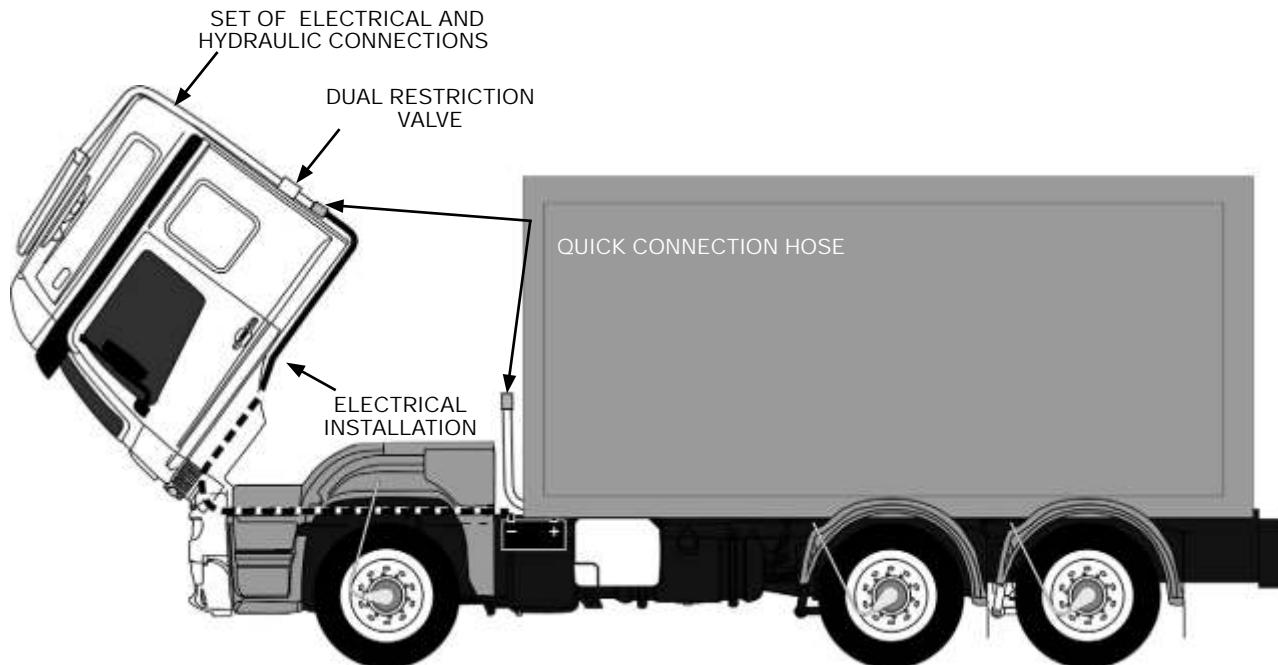
## 4- UNITS WITH TILT CABINS

### a) With Water Tank Applied to the Cabin.

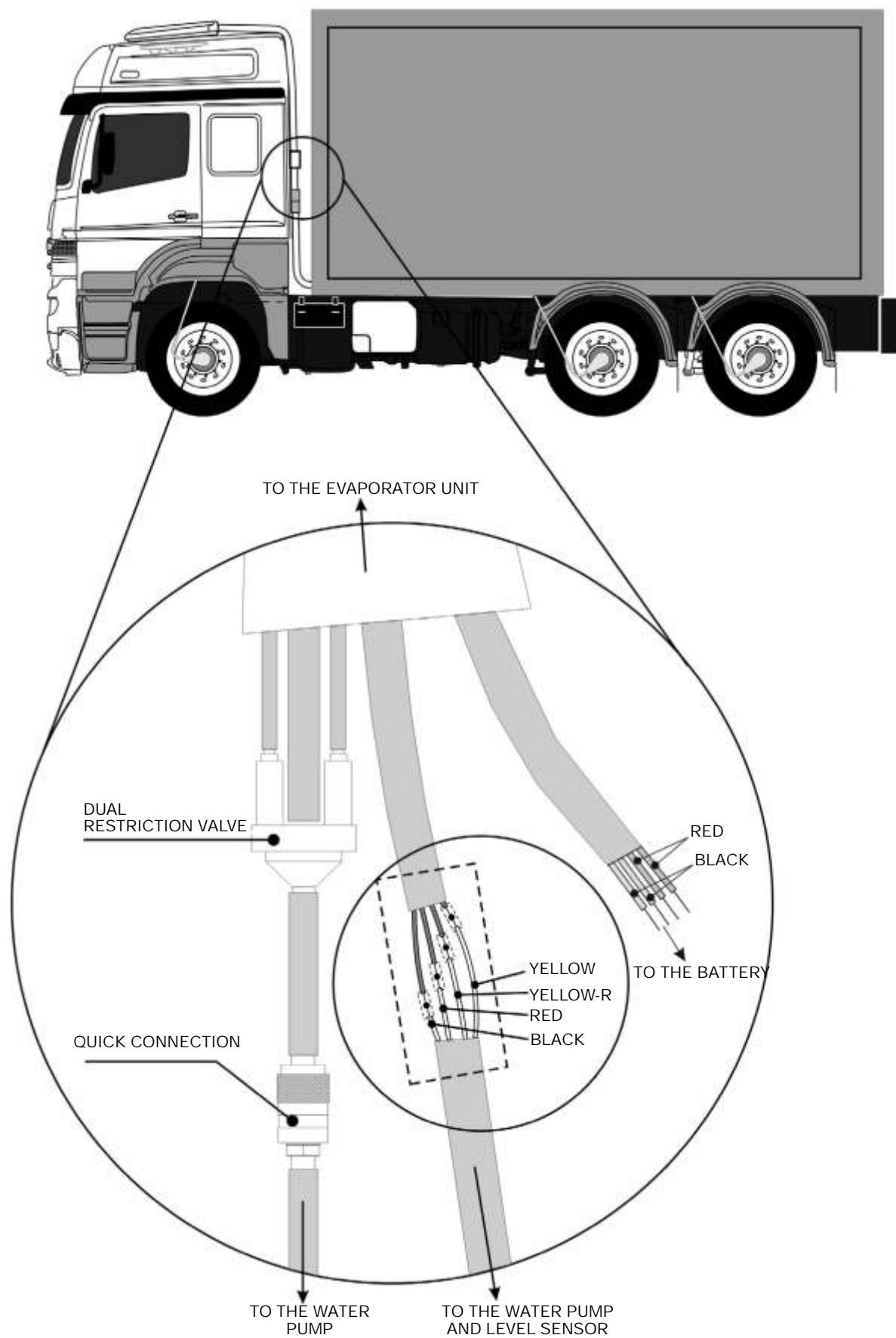
*Note: The power supply must be direct from the battery or the main switch.*



### b) With Water Tank Applied to the Chassis



Wires to the water tank and battery must be extended. See detail below.



## **5- RECOMMENDATIONS TO THE INSTALLER**

- Wet the evaporator immediately after installation in order to fast start cooling.
- Clean the working area.
- Provide the owner with the Viesa User's Manual and warranty information.
- Explain the user the operation and maintenance of the equipment in detail.
- Explain to the user that, BEFORE SWITCHING ON THE UNIT  
one window must have a 3 cm opening and all other vents must be closed.  
This opening will allow hot air to be expelled from the interior.

## **6- GENERAL MAINTENANCE**

The equipment will delay in cooling until the evaporator is totally wet.  
Do not use fuses higher than 15 Amp.

The equipment will deactivate automatically due to low tension so  
as to prevent damages to the battery.

Use only clean water.

Foresee replenishment of water taking into account that the  
equipment consumes between 2 and 5 litres per hour depending on  
the ambient temperature.

During short stops leave the equipment on so as to keep the cabin  
fresh.

System must be turned off when exhaust fumes or toxic particles  
could enter the cab through the system.

VIESA SCENTED FLUID (EVERY 200 HOURS OF USE)



GRANULATED CALFA BAS EACH 6 MONTHS



**⚠ When performing maintenance of the equipment or if  
the evaporator unit's cover or the upholstery cover are removed,  
the system MUST NOT BE SWITCHED ON and  
you must not switch it on with any of these elements removed.**

Keep the tank clean. Every 200 hours of use

- Drain all the water from the tank by removing the drain plug.
- Rinse with clean water thoroughly
- Pour one bottle of Viesa Scented Cleansing Fluid.
- Fill-up the tank with clean water.

Each 6 months change the package of granulated Calfa Bas crystals.  
Do not use chemical products to clean the control panel.

Every 2 months or according to working conditions:

- Submerge the evaporator in water with bleach (1).
- Clean the grids of the air entrances (2).
- Clean the filter of the collector tray (3).

Once a year replace the evaporator (1).



## 7- REPLACEMENT OF THE MAIN COMPONENTS

### REPLACEMENT OF THE MOTOR OF THE BITURBO BLOWER

Remove the cover of the evaporator unit fixed with 5 screws.

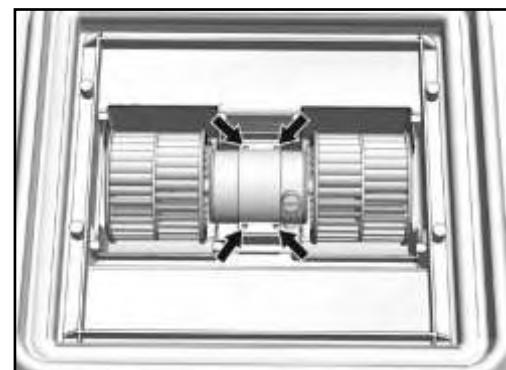
Remove the evaporator.

Remove the two turbines' covers taking away the 8 screws.



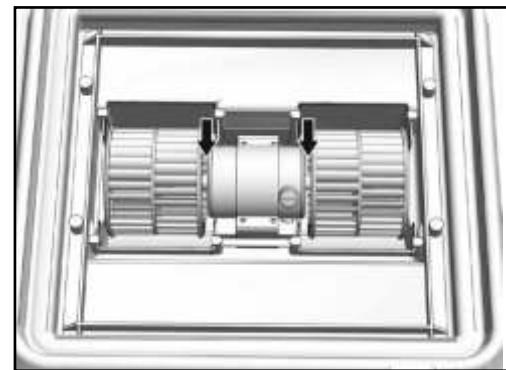
Remove the 4 screws of the blower mounting bracket and remove it.

Replace the motor making the corresponding electrical connection.



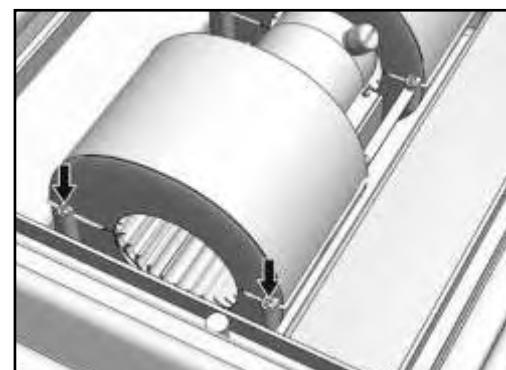
Put back the motor's mounting bracket and adjust.

*Important: Before tightening the bracket, center the motor correctly so that the turbines do not rub the sides.*



Put back the two turbine covers.

Place back and adjust the cover of the evaporator unit.



## REPLACEMENT OF THE EVAPORATOR

Remove the upper cover, after removal of the 5 screws.

Remove and replace the evaporator (disconnect  
reconnect the 9 x 15 cm hose).

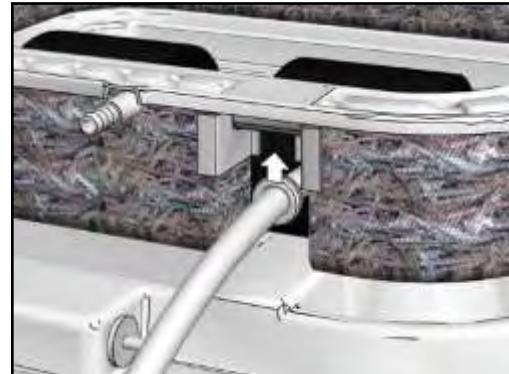


### Important:

*Make sure the electrical installation is inside its harness.*

Properly center the air filter.

Place back the upper cover fixing it with the 5 screws.



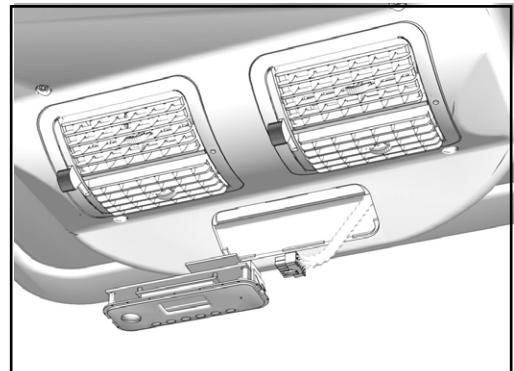
## REPLACEMENT OF THE POWER AND CONTROL MODULE

Remove the command and control module from the front of the upholstery cover.

Disconnect the electrical installation.

Connect the electrical installation to the new module.

Insert back the command and control module into the upholstery cover.



## 8- FAILURE LOCATION GUIDE

### EQUIPMENT WITH LOW EFFICIENCY

Check:

#### WATER PUMP PERFORMANCE AND ELECTRICAL CONNECTIONS

- a) Remove the upper cover.



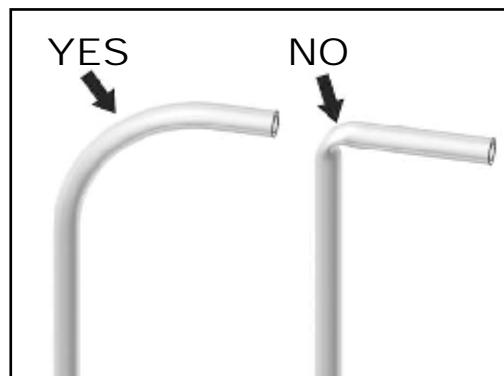
- b) Remove the water hose from the evaporator.



- c) Using a container with a cm<sup>3</sup> scale on it, turn on the pump and collect the water for one cycle, which should be between 800 cm<sup>3</sup> (minimum) and 1500 cm<sup>3</sup> (maximum).

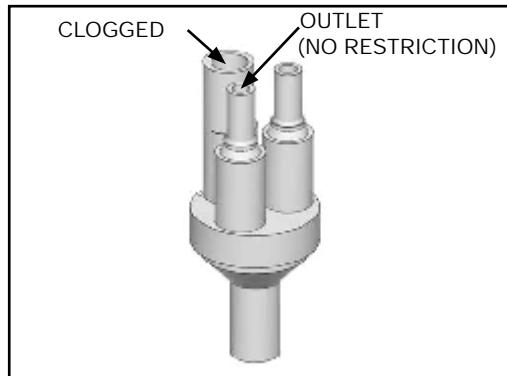
If the water collected is below the minimum, check that:

The evaporator hose is not obstructed, bent or kinked.



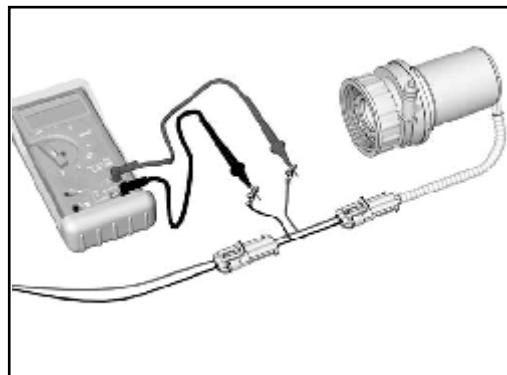
The water cycle is properly set.  
(See Water Cycle Setting before)

The restriction valve is not clogged and that water flows freely through the outlet.



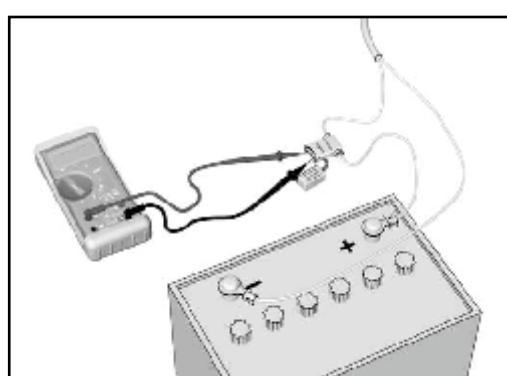
The water pump supply voltage is correct: 9.8 V minimum.

**Important:** Measure at the pump's connector with the pump working and the turbo blower at maximum speed.

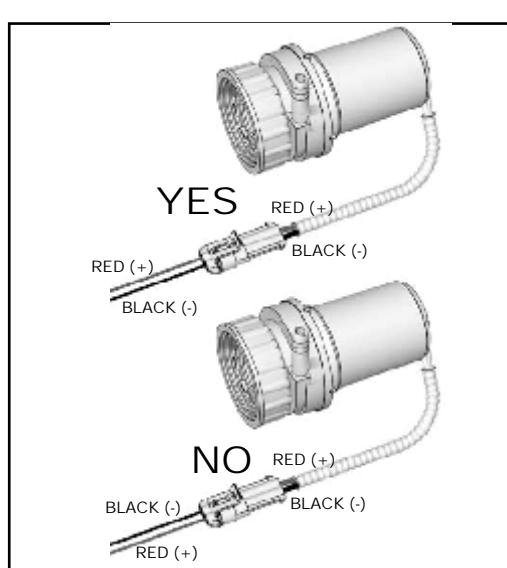


The water pump consumption (Amp) is between the specified values: between 3.7A and 6.0A (with water running through).

**Important:** Remove the fuse and measure at the fuse box while the pump is running and the biturbo blower is off.



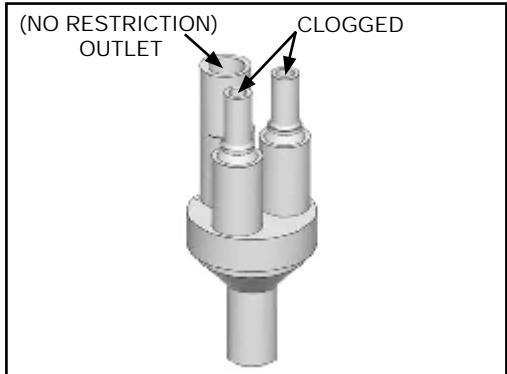
The water pump electrical connections are correct.



If the water collected is above the maximum, check that:

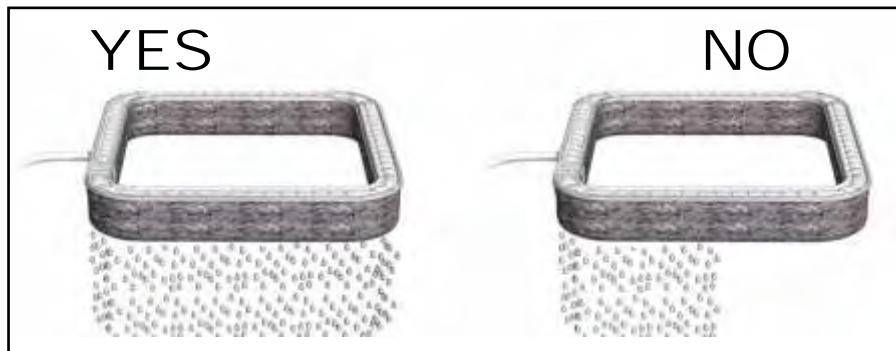
The restriction valve is not clogged and that water returns freely through the outlet.

The water cycle is properly set.  
(See Water Cycle Setting before)



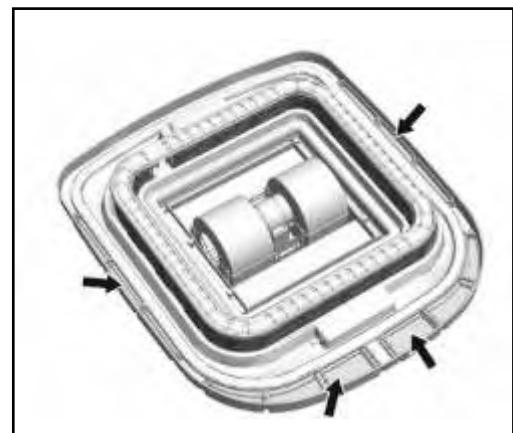
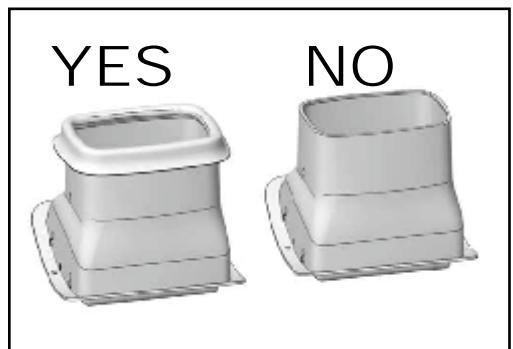
#### EVAPORATOR ASSESSMENT

Manually pull up the evaporator and with the water pump working, check that water is distributed evenly around the evaporator.



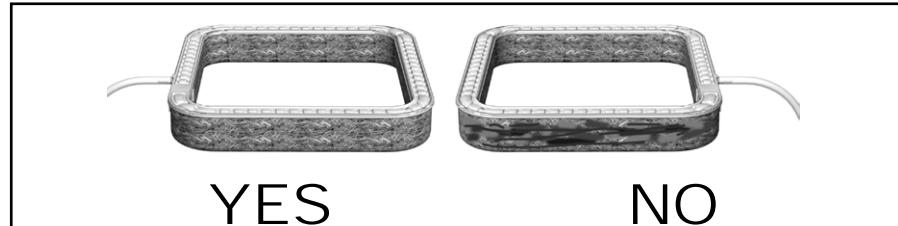
#### VENTILATION

Check that the air grilles have their weather strips.

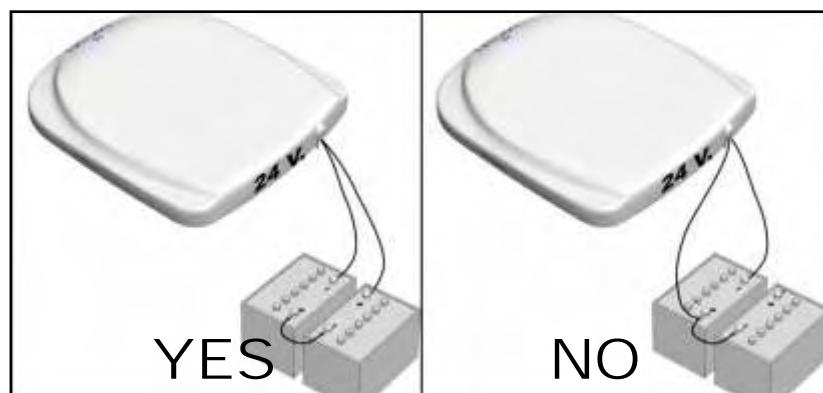


Check that the air intakes are not obstructed.

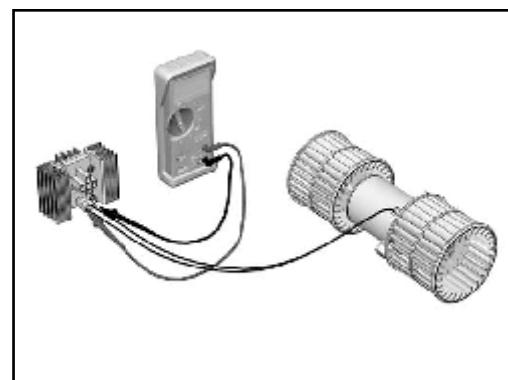
Verify that evaporator and air filter are not dirty or lacking wooden chips.



Verify that electrical connections are rightly performed.



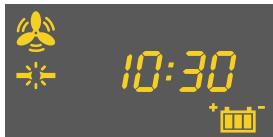
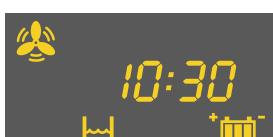
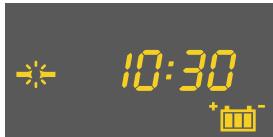
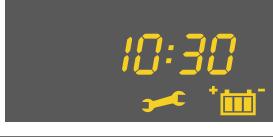
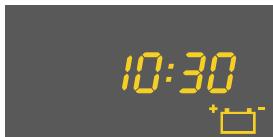
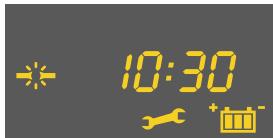
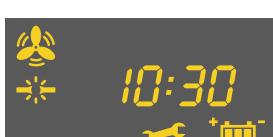
Verify the biturbo blower input voltage: 9.5 V minimum.



Important: Measure at the biturbo blower pins and when it is working and  
the water pump is working.

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
<i>The indicators are ok, but the equipment has low efficiency.</i>	<b>HYDRAULIC</b>	<b>HYDRAULIC</b>
	1- Inverted electrical connections of water pump/s. 2- Evaporator 9 x 15 cm hose blocked.  3- Blocked holes at the water distributor of the evaporator. 4- Dirty evaporator.  5- Water pump damage. 6- Faulty power and control module. 7- Water Cycle Switch with wrong setting.	1- Connect correctly: Red (+) and black (-). 2- Modify.  3- Replace the evaporator.  4- Clean and/or replace the evaporator. 5- Replace the water pump. 6- Replace the power and control module. 7- Reset Water Cycle Switch according to water column height.
<i>When the equipment is on, water enters by the air grilles and/or it spills through the ceiling.</i>	<b>VENTILATION</b>	<b>VENTILATION</b>
	8- Air grilles without weather strips. 9- Blocked air entrances of the base of the unit. 10- Faulty blower.	8- Put strips to the air grilles.  9- Clean the air entrances.  10- Replace the motor of the blower.
	1- Incorrectly oriented holes of the water distributor of the evaporator. 2- Blocked dual restriction valve. 3- Blocked return hoses. 4- Blocked filters in the evaporator's tray. 5- Water column less than 40 cm. 6- Water Cycle Switch with wrong setting.	1- Replace the evaporator.  2- Clean or replace the valve. 3- Clean hoses or change path. 4- Clean filters.  5- Place the tank lower. 6- Reset Water Cycle Switch according to water column height.

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
<i>The fuse burns out continuously.</i>	1- Inverted electrical connections to battery. 2- Short-circuit in the water pump or its connections. 3- Damaged power wire.	1- Connect red wire to + black to - 2- Replace the water pump or repair. 3- Locate, repair and seal correctly.
<i>Water pump operation not showing on display. (blower works at one speed only)</i>	1- Faulty power and control module.	1- Replace the command and control module.
<i>Power module burns out.</i>	1- Seized biturbo blower.	1- Replace biturbo blower motor.
<i>The equipment works correctly, but the fuse burns out continuously.</i>	1- Excessive amperage draw and/or short-circuit in the blower. 2- Excessive amperage draw and/or short-circuit in the water pump. 3- Damaged power wire.	1- Replace the blower. 2- Replace the water pump. 3- Locate, repair and seal correctly.
<i>Blower at its maximum speed cannot be turned off.</i>	1- Faulty power module.	1- Replace the power module. Check the free spinning of the blower.
<i>Blower works, display shows normal operation but the pump doesn't work.</i>	1- False contact and/or disconnection to the control and command module. 2- False contact and/or disconnection of the water pump. 3- Faulty control and command module. 4- Faulty water pump.	1- Repair and/or connect.  2- Repair and/or connect. Tin terminals of the water pump. 3- Replace the control and command module. 4- Replace the water pump.
<i>The speeds do not match the display indications or they do not change.</i>	1- Faulty blower. 2- Humidity or water in the power module's terminals. 3- Faulty power module.	1- Replace the motor of the blower. 2- Clean and seal. Check condition of evaporator. 3- Replace the command and control module.

DISPLAY INDICATIONS	POSSIBLE CAUSES	SOLUTIONS
	1- Disconnected water pump cables. 2- Cut cable/s. 3- False contact between the terminals of the water pump.	1- Connect. 2- Locate, repair and seal correctly. 3- Clean and/or replace the terminals.
	1- Disconnection of the water level sensor cables.  3- Faulty water level sensor.	1- Connect water level sensor. 2- Locate, repair and seal correctly. 3- Replace the water level sensor.
	1- Disconnected cables of the turbo fan. 2- Cut cable/s.  3- Bad contact between the turbo fan terminals.	1- Connect.  2- Locate, repair and seal correctly. 3- Clean or replace the terminals.
	1- End of the evaporator working life.	1- Replace and configure to zero.
	1- Faulty control and command module.	1- Replace the control and command module.
  	1- Low battery level. 2- 1 x 0,50 red or black cable disconnected or cut.	1- Recharge battery. 2- Connect.
	1- Turbo fan excessive power consumption. 2- Short circuit in turbo fan.	1- Replace. 2- Locate, repair and seal correctly.
	1- Water pump excessive power consumption. 2- Short circuit in water pump.	1- Replace. 2- Locate, repair and seal correctly.

INSTALLATION MANUAL VIESA INTELLIGENT 12

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